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ABSTRACT

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USE OF COMPUTER-ASSISTED INSTRUCTION FOR INTERPERSONAL SKILL TRAINING--A PILOT STUDY

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FOREWORD

This project is part of subproject P03A, Project 43-03 as presented in the Technical Development Plan of the Navy Personnel Research and Development Center. The role of the Naval Training Equipment Center in this subproject was to evaluate the utility of the PLATO IV technology in training for socially-related behaviors. The work on one general approach taken to this task (reported here) was performed jointly by the Institute for Social Research at the University of Michigan and the Naval Training Equipment Center, with the cooperation of the Recruit Training Command at Orlando, Fl.

The behaviors selected for instructional development were those required by company commanders for use in their interactions with recruits during basic training. Results from a pilot evaluation of this first effort were encouraging. Work has continued beyond the eighteen-month period summarized in this report to improve and expand the training materials and prepare for more definitive evaluations of the new programs.

One contribution made by this project consists of a new use of a computer, in the form of the computer-mediated role playing exercise. Another source of contribution is suggested by the "subgame". Here, an old use of a computer (game playing) is used to "personalize" the instruction (i.e., demonstrate the effects of being the object of good and poor performance). Perhaps the major contribution to be derived from this work lies in its potential for demonstrating that computer administered instruction -- heretofore practically excluded from social skills training -- has an especially relevant role to play in such training. Once this concept has been demonstrated, products from this project can serve as a basis for expanding its application to a variety of job areas.

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SECTION I

INTRODUCTION AND BACKGROUND

Much emphasis has recently been placed on the "people programs" of the Navy. Z-gram 93 states that the basic objective of these programs "is to instill at all levels an attitude which clearly recognizes the dignity and worth of each individual and create an environment in which every officer and enlisted man will be treated with respect and accorded the trust, confidence and recognition each human being wants and deserves." The Human Resources Development Program, established by Z-gram 110, incorporates human relations as one of the areas of concern, and is an example of a people-oriented program. The Department of the Navy Human Goals Plan represents a formalization of these various programs.

One of the basic ingredients of human relations is interpersonal skill at the man-man interface. Skills which enable an individual to relate productively to other persons and groups are as necessary to the functioning of complex socio-technical systems as are skills which enable him to perform a given task, operate a particular machine, or complete a specific process. In the Navy, as in the civilian work world, media accounts describe organizational conflicts and difficulties which require competent resolution. The reasons for the increasing numbers of incidents and mounting difficulties are not mysterious: interpersonal organizational tasks have become more complex in a fashion analogous to the rising complexity of technical tasks.

Therefore, one of the reasons for this new "people" emphasis in the Navy is the need to provide interpersonal skills to individuals in order for them to behave effectively in a complex system. Another reason is the need to provide the type of work or organizational environment that results from good human relations. With the move to an all-volunteer force, the Navy must compete with the other services as well as with civilian business and industry for its manpower needs. Interpersonal skills not only facilitate the effective completion of organizational tasks, but also encourage organizational members to achieve their individual needs more effectively.

Human Resources Development at the Recruit Training Command in Orlando, Florida, has gone beyond the general abstractions of Z-gram 93 to some actual events. For example, prospective company commanders (CC's) receive up to two weeks of people-oriented training before training their first recruit company. Also, various programs are directed at the recruit to provide him with insights concerning his relationship with his company commander as well as his fellow recruits.

Although some progress has been made in designing training procedures which promote the acquisition of these critical interpersonal skills, much remains to be accomplished. Interpersonal skills and their development are often confused with other qualities or learning. For example, skill is sometimes mistakenly referred to as the possession of information or facts in the human relations area, yet experience abounds to demonstrate that the mere knowledge of the importance of motivating one's subordinates or resolving inter-racial conflict, does not guarantee that the knower can perform the desired behaviors. Similarly, skill is often confused with experiential exposure, with the apparent assumption that novelty and depth of feeling permit learning from a single trial. Without appropriate feedback and direction, experience does not automatically lead to skill acquisition.

It is clear to the careful conceptualizer that skill refers to something more than just information or experience. Although not proposed as a formal definition in any sense, skill could be conceived as an integrated ability to behave at situationally appropriate times in order to bring about desired outcomes. Differences in skill could be measured in terms of "differences in capacity to discriminate between stimuli requiring different responses, differences in knowledge of the correct or effective responses to these different stimuli, and differences in capacities to execute the correct responses" (Vroom, 1969). Skill is acquired through reinforced practice and is the application of knowledge and experience. Thus, many of the more traditional methods of instruction such as classroom lectures and textbook presentations are not very effective in helping individuals acquire abilities in areas like interpersonal skills.

SECTION II

STATEMENT OF THE PROBLEM

One of the many possible training approaches for interpersonal skill acquisition is computer-assisted instruction (CAI). Computer-assisted instruction is developing rapidly, following advances in computer programming languages, information storage and retrieval, time-sharing and process-control capabilities, and audio/visual interaction modes. The Computer-based Education Research Laboratory at the University of Illinois has developed a CAI system called PLATO, now in its fourth generation version, and an instructional programming language called TUTOR. Implementation studies are made possible by the leasing of user terminals connected to the Illinois system and are presently occurring in many areas. For example, the PLATO system has been used for performance training at the Naval Personnel Research and Development Center, helping trainees to learn serial tasks such as operating and troubleshooting electronic equipment. The computer's ability to simulate technical environments, such as a radar screen, as well as control the learning sequence adds a new dimension to the training process.

These developments in the state-of-the-art make the application of computer-assisted instruction and simulation to interpersonal skill training not only potentially feasible but also desirable. It is feasible based upon present research efforts occurring around the country, using PLATO and other systems in relationship to a variety of content and skill areas (Farr, 1972). It is desirable from the standpoint of the immense needs of the Navy, as well as most civilian organizations, for an interpersonally skilled membership. These needs are not being satisfied with present training techniques. In addition, providing the training through interaction with a computer terminal removes the need for an instructor and allows the student to practice his new skills in a non-threatening situation.

A small pilot study to evaluate the application of the PLATO system to interpersonal skill training in the Navy was conducted. There were many unknowns connected with such an effort: the feasibility of training social skills using CAI; the interpersonal skills relevant to our subject population (company commanders); the capabilities of the PLATO system; and the process of authoring and programming/coding training materials. Due to these unknowns, the scope of the project was kept at an exploratory level, pursuing the accomplishment of objectives rather than the testing of hypotheses. In fact, one of the implicit objectives was the generation of testable hypotheses for future study.

SECTION III

METHOD AND RESULTS

Since this research effort was exploratory and developmental in nature, it seems more appropriate to discuss the methods used and the results obtained sequencially by objective--rather than to maintain separate classification headings of "method" and "results." There were four major objectives for this year's efforts:

a. Skill selection

b. Training material development

c. PLATO utilization, and

d. Design and implementation of a pilot study.

Each of these objectives will be discussed with emphasis upon the methods used and the results obtained. This work was carried out at the Recruit Training Command at Orlando, Florida.

SKILL SELECTION. Various methods were used to gain an understanding of the Recruit Training Command and of the role of a company commander. Interviews and group discussions were held with experienced company commanders. In addition, company commanders were observed on-the-job and recruits were interviewed to find out more about the type of interpersonal interactions that occur. Companies were observed while in the barracks, group dynamics classes were attended, a discussion was held with a company of recruits without its company commander, and a "drop conference" was observed in which a group of company commanders who have completed pushing a company talk about training. Also, there was some participation in a week-long course in human relations for new company commanders. This data collection occurred over a two-month period of time and involved a wide range of company commanders.

There were three major purposes for this data collection process. The first purpose was to identify the interpersonal skills that are relevant to company commanders and that would help them do a "better job." A "better job" was defined in terms of acceptable system criteria such as improvement in MED scores, sick call rates, demerits, and recruit attitudes. The second purpose was to evaluate methods of data collection with respect to a Navy setting. Observation forms were created and tested, and

different occasions in the daily activities of the company commander were sampled in order to better understand how to gather the needed measurements. The last purpose was to identify current training efforts for company commanders with which new training approaches could be integrated.

During this period, a list of interpersonal skills relevant to the company commander's role was created and included:

a. Giving effective feedback to recruits

b. Giving consistent and timely rewards and punishment to recruits

c. Setting goals and expectations of recruits, reducing ambiguity

d. Teaching recruit petty officers, delegating authority

e. Being approachable to recruits, having social sensitivity

f. Communicating effectively with recruits, including reflective listening and effective use of two-way communication

g. Problem-solving effectively with recruits so that both quality and commitment are obtained in the solutions.

There were three major considerations applied to the selection of a skill area for this study. First, situations requiring the skill should occur frequently in the daily work of company commanders. Second, the initial skill level of the company commanders should be relatively low. The rationale for both of these considerations is fairly obvious. If company commanders rarely require the use of an interpersonal skill, or if their skill level is already high, their training would not seem to be an appropriate activity. The last consideration for selection concerned building upon the expertise and interest of the research staff. Based upon these three factors, the skill of giving effective feedback was selected for the first year's effort.

When giving feedback, its usefulness is maximized when the other person understands, accepts, and is able to do something about the feedback received. There are various dimensions or aspects of feedback (this multi-dimensionality facilitates measurement--another advantage of selecting the feedback skill area) which help a recipient understand, accept, and apply the information given. These dimensions have been listed in various forms and in various places. One of the first writers to identify these aspects of feedback was John Anderson in an internal document circulated in the Procter and Gamble Company several years ago (Anderson, 1970).

A summmary of these dimensions is presented in the followihg list. Each dimension implies a prescriptive continuum rather than a definitive statement as to the right or wrong way to give feedback. For example, direct feedback is typically more effective than indirect feedback. However, this is not to say that indirect feedback is wrong. Indirect feedback may still be helpful and is better than no feedback at all. The dimensions include:

a. Feedback should be given directly by the person observing the behavior, rather than indirectly through some third party or in written form.

b. Feedback should be given with a real intent of helpfulness, rather than the intent of belittlement. The tone of voice, expression on the face, choice of words, all can communicate this intent. A foundation of trust between the giver and receiver of feedback is also important.

c. Feedback should be descriptive rather than evaluative. Evaluative feedback leads to defensive behavior and poor listening.

d. Feedback should be specific rather than general, with recent examples rather than old generalizations.

e. Feedback should be given when the receiver is ready to accept it. In other words, it should be well-timed.

f. Feedback should be directed towards behavior which the receiver can do something about, in amounts he can handle.

g. Feedback should be about relevant behavior, and have face validity for the receiver.

While much has been written about the importance of giving effective feedback, and about feedback's relationship to improving performance, the causal links between company commander skill in giving feedback and recruit performance had to be assumed at the onset of the study. Thus, apart from any other findings, one object of this study will be the examination of the link between feedback and individual and organizational criteria variables.

TRAINING MATERIAL DEVELOPMENT. For any training situation, an assessment is needed concerning the required terminal behaviors (desired performance) of those being trained. What tasks make up a given role? What specific skill units are a part of each task? First, the behaviors incorporated in each skill unit must be achieved, and then the issue is one of increasing their frequency as well as their internalization, proper sequencing and application. This requires an emphasis not only in the actual skill acquisition, but also in cognitive learnings and concomitant learnings in the area of attitudes. Interpersonal skill training requires a conscious linkage of behaviors to developing understandings and value orientation--and continuing interaction which confirms or disconfirms those linkages.

Intensive observations of company commanders "pushing" recruit companies were collected. These observations provided anecdotal data for building realistic training scenarios, and facilitated a "skill analysis" of the selected skill area. The resulting skill analysis identified most of the previously listed dimensions of giving effective feedback as being relevant subunits of the total skill for our specific subject population. Thus, the training program is designed to increase the frequency of behaviors consistent with the various aspects of giving effective feedback.

The actual training materials take the student through a series of pretests to measure his initial skill level. Following these pretests are instructional exercises and practice. When the student has demonstrated acceptable cognitive understanding of the skill being taught, he proceeds to a series of more performance-oriented exercises where he is given an opportunity to apply and internalize the information learned. This application of knowledge takes the form of continual practice with knowledge of results. Finally, there are appropriate posttests to measure the effects of training. All of these steps are more specifically outlined in figure 1.

The initial phase of this materials-generation involved the development of the final examination or performance check which the student would undergo. Subsequently, drafts of training materials using problem situations and instruction in appropriate solutions were designed and thoroughly tested and revised (using present company commanders as test subjects).

During the period in which these materials were proposed and developed, certain general problem areas were always present. The central such problem revolved around the authenticity with which the training materials and situations which they describe simulate the real stimuli and responses which will or should occur outside training. The PLATO system's capabilities begin to attack the problem of simulating stimulus situations. Designing appropriate response modes continues to be a difficult area.

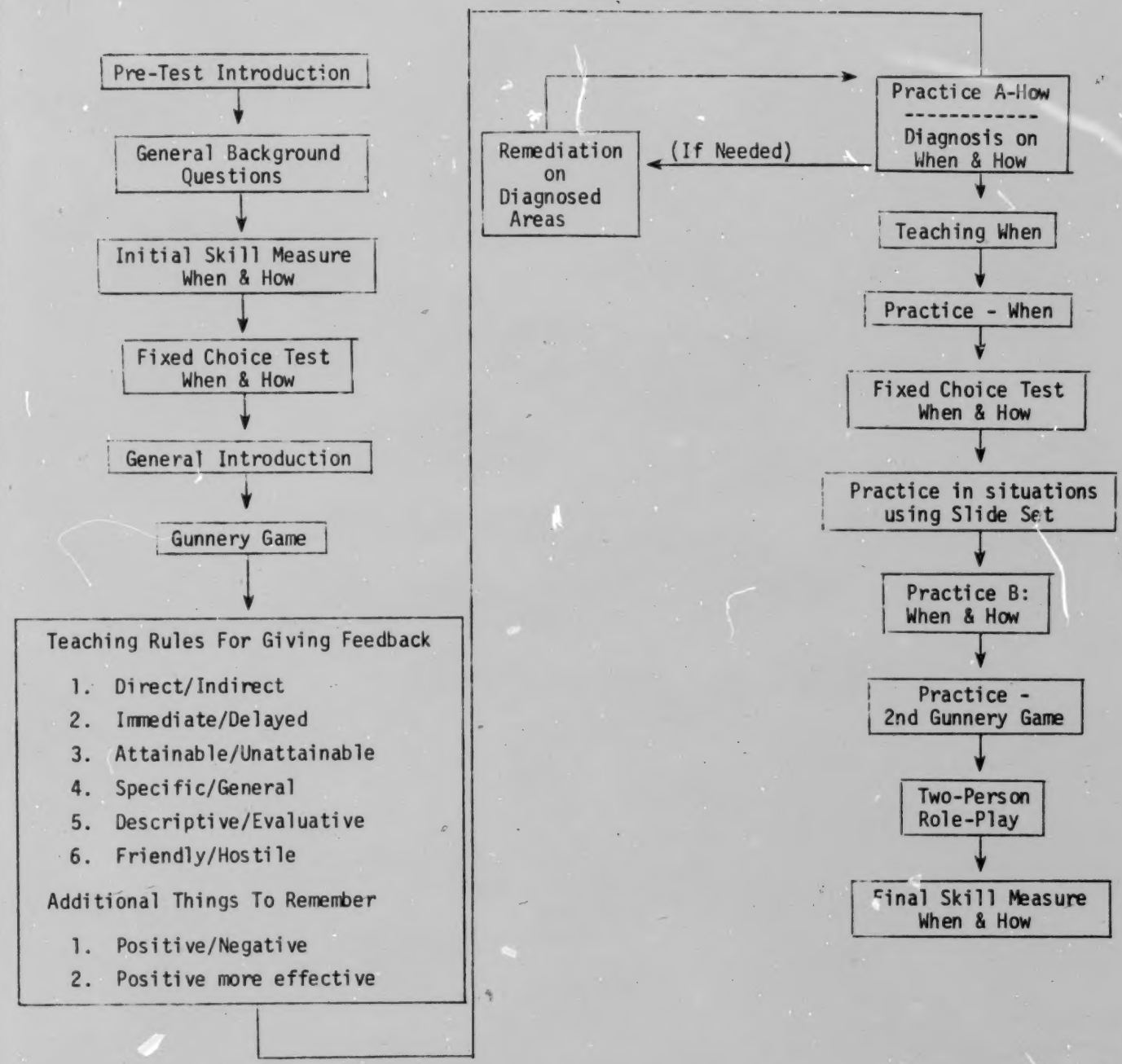

Figure 1. Training Sequence Flow Chart

Ideally, training in the skill under consideration would provide opportunities for the student to respond in a realistic mode--that is, by providing an unconstrained response to a prescribed situation and open-ended question. However, even if there is no problem in recording that response, either as spoken on an audio disc or as typed into computer memory, there is still no feasible way to use PLATO for evaluating the substance of that response on the complex dimensions which this skill area covers. This inability to process speech or unconstrained text without human information may constrain the authenticity to which the training materials aspire. For example, one can present a complex situation and accept an unconstrained response, but the continuation of instruction must be based on simple responses or the student's self-assessment since the computer program knows little about the substance of what was said.

For a complete listing of all the current training materials, see appendix A.

PLATO UTILIZATION. In order to evaluate the use of PLATO for any given training purpose, an understanding of the PLATO system and its capabilities is necessary. For this project, the approach to PLATO was divided into two areas--one a conceptual, general appreciation for the present uses of PLATO and for the potentialities of the system, and the other a more specific, procedural background in actually using the TUTOR language to code training materials into the system. For this study, these two areas of information were acquired by different members of the research team. This created some problems and emphasized the need for coordination. This section discusses the acquisition of information about PLATO and the roles played by various members of the study team, all in relationship to the utilization of PLATO capabilities with respect to interpersonal skill training.

The staff from the Institute for Social Research (ISR) attended two conferences in the Ann Arbor area on CAI. These conferences provided a good background on the present state-of-the-art for computer-assisted instruction. Parts of each conference specifically discussed various uses and users of the PLATO system. ISR staff also consulted with Dr. Karl Zinn from the Center for Research on Learning and Teaching at the University of Michigan. His general knowledge of CAI systems and familiarity with PLATO proved to be a valuable resource. With Zinn's help, the range of capabilities that computer assistance (PLATO in particular) could provide were investigated. On the basis of these discussions, the training outline and initial training materials were examined for effective utilization of PLATO's resources. Also, since this study's goal is some evaluation of PLATO, additional forms of training and practice were prepared in an effort to maximize PLATO application.

The resultant training materials make use of many of the present capabilities of the system. The following list outlines some of these applications.

a. The training materials contain a motivating or attention-getting quality not usually achieved in other approaches to self-instruction (programmed instruction, scrambled text, etc.). True, some of this motivation is due to a "pinball effect" or to the gadgetry aspect of the user terminal, but some motivation is also a true effect due to the responsiveness of the system. The PLATO user console with a comfortable display, convenient keyboard and touch-sensitive screen has been judged particularly encouraging for man-machine interaction. The motivating effect does not seem to wear off, but last throughout long periods of training using the PLATO system.

b. The computer program includes provisions for recording performance and advising the learner of his progress. A computer-based system shifts the bother of scorekeeping, skipping, keeping track of misses, deciding upon remediation, etc., from the student to the author, encouraging the student to give complete attention to learning.

c. The training program does contain some diagnostic capability. Criteria for remediation are included, as well as methods of aggregating student data. The training program is being modified to provide more computer-judgement of student responses. The pretest open-ended questions and the identification of rules being used or misused are examples of steps in this direction. As with scorekeeping, the burden is placed on the author to specify diagnosis and remediation.

d. The computer-delivered training program conceals, and to some extent, controls the teaching material so that the authors can specify greater complexity in a strategy of instruction and assume more accuracy in its execution than is possible when the student is expected to find his way through the branching instructions in the pages of a large booklet. This control capability can also add a time dimension to the student interaction. Some decisions/responses in real life need to be made within specific time periods.

e. The training program in many places uses an interactive, almost conversational approach. This approach does not seem to stand up as well (lack of face validity) on paper. The interactive capability also helps the student to feel that the program is individualized to him. The student does not seem to worry about material not seen as has been reported for the parts of a scrambled text not read or branches not taken. The training materials also contain some graphics (gunnery game, slides) that save verbiage and are more realistic than can be usually generated on the printed page. The PLATO system is particularly strong on convenient design of instructional graphics on a low-cost user terminal.

f. The training program has standard criteria for performance.

g. The training program is consistent from student to student--both in quality and method of presentation as well as quality of materials.

h. The training program is easily changed and improved. The TUTOR language can be used in a way which is self-documenting; on-line programming is conducive to change. Certain aspects or units of training can be varied systematically and tested for student impact. Thus, research on teaching and evaluation of training can be conducted more easily than with other learning approaches.

i. The training program will be accessible to the student at his convenience.

j. Student performance data are easily obtained and summarized. Attitude data about the learning situations can also be collected by on-line questionnaires or special conventions for comments. The PLATO system favors use of a "comment" process by the student, whereby his reactions, questions and opinions may be entered into a file for review by the author.

k. The training program allows the student to control his learning experience to some degree through such means as giving him the option of repeating certain exercises such as the gunnery game and the slide set. This tends to reinforce the expectation of a reactive/interactive system.

l. The training program uses a form of computer-moderated role-playing. Without natural language processing based on a spoken input, it is not practical to set up interactive role-plays between the computer program and the student. However, two students can role-play at two terminals in close physical proximity, with the computer acting as a moderator and process consultant. Roles are sequentially alternated, situations generated and questions asked concerning the interaction--all under computer control.

m. The terminal has a microfiche projection capability combined with the graphic display. To make use of this feature, slides were taken of typical occurrences in the daily activities of company commanders. Problems occurred at almost every step of this process for image projection on PLATO. For example, the microfiche preparation technique left off critical parts of each slide. Also, the microfiche were unclear and out of focus when projected on the screen of the terminal. Eventually, the use of the microfiche random-access image projector was replaced by the use of an external slide projector controlled by a connecting box to the terminal, projecting upon a screen.

From one perspective the training materials may appear to use the PLATO system as an expensive page-turner. However, it should be remembered that: (1) effective use of display control is valuable (automatic page turning well placed in a training sequence is worth the added cost); (2) electronic page turning need not be expensive; the PLATO system compares favorably in cost to many other training approaches; and (3) the training program makes use of capabilities (see the above list) that cannot be offered in other training approaches such as programmed learning.

Meanwhile, the Naval Training Equipment Center (NAVTRAEQUIPCEN) staff familiarized themselves with the PLATO system and the TUTOR language. Instruction and advice were obtained both at the University of Illinois as well as on site in Orlando. Following this introduction, NAVTRAEQUIPCEN staff coded the various training materials using a trial and error approach, learning as they went. Frequently, the coded materials were tested by experienced company commanders to "debug" the coding and test the realism and appropriateness of the training materials.

As can be seen, the ISR staff and the NAVTRAEQUIPCEN staff were acquiring different areas of expertise and doing different things. Figure 2 is a representation of how these activities are related. This figure can best be understood by beginning at the bottom and proceeding in a clockwise direction. Lettered elements represent the various groups and products involved in the activities and the numbered arrows represent the various activities themselves.

Thus, the starting point is (A) the trainee population, which in this study would be new company commanders. This group appears as the first element because their behavior or performance deficit is necessary to establish the need for training in the first place. A complementary group at this initial point is made up of (B) trainers and other advisors, in this case, the RTC staff, especially company commander school staff. Group B can consist of both those responsible for preparing the trainees, the school staff, and those to whom the trainees' behavior makes a difference, regimental and battalion staff.

Moving in a clockwise direction from these starting points, figure 2 indicates that groups A and B provide information regarding such things as present levels of trainees' performance, ideas about techniques that seem to be effective in teaching the subject matter, areas where trainees traditionally have problems, etc. These kinds of inputs are indicated by (1a) and (1b) on figure 2. They are used by the third group (C), the authors, which in this case are the ISR staff. It should be noted, however, that NAVTRAEQUIPCEN staff did serve as authors to some extent in that they collected data [1a and 1b] and helped in the planning and design of some of the materials.

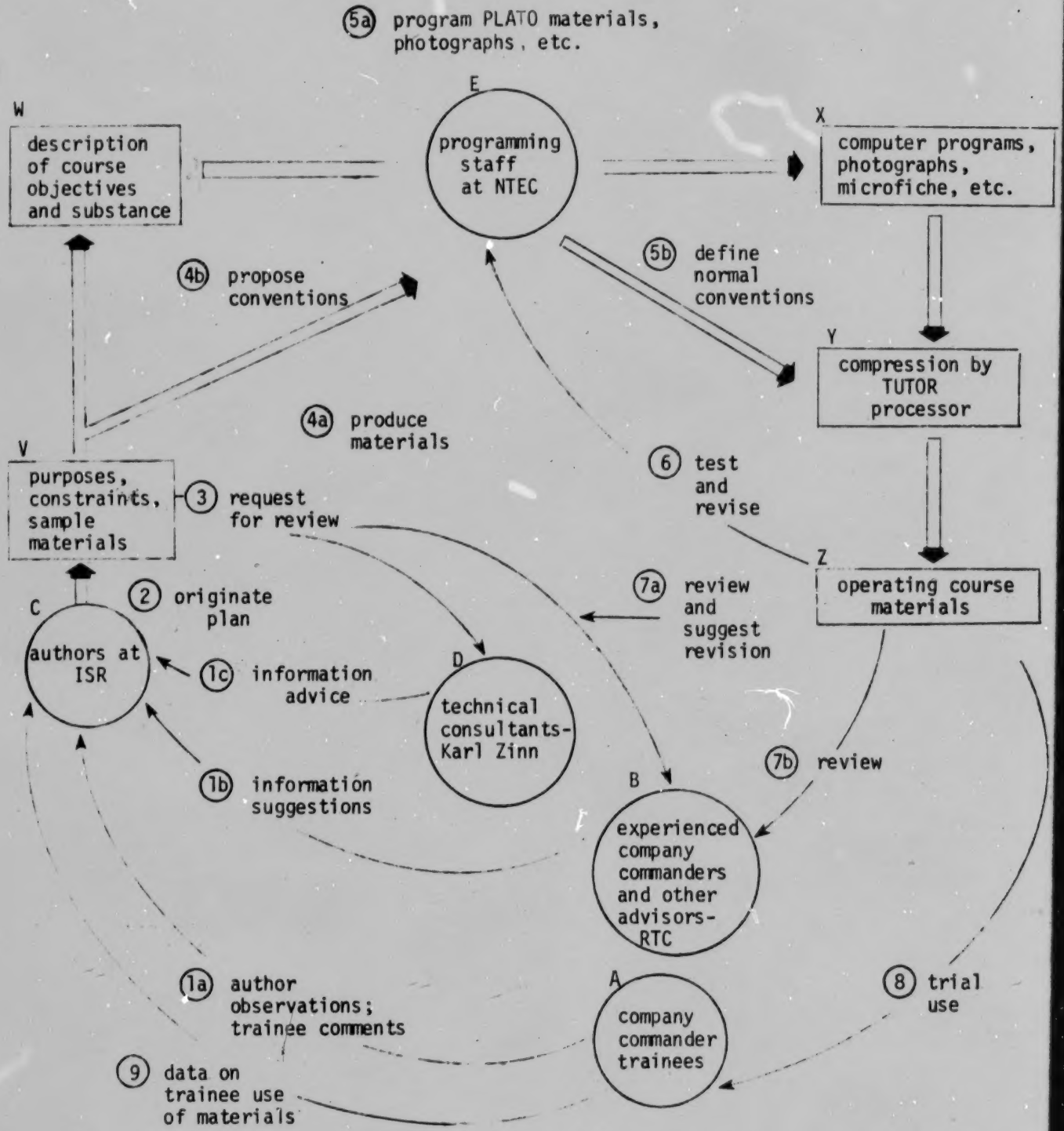

Figure 2. One Representation of Authoring Activity

The authors worked with another group, (D) technical consultants. These might be experts in the content areas being trained, instructional technologists, consultants on the development of CAI, etc. In this case, the ISR staff were the subject matter experts. They did, however, use the aid and advice of Dr. Karl Zinn (1c).

After accumulating these various kinds of informational inputs, the authors develop a set of parameters within which to work and design materials (2). The product of this development process may take the form of instructional objectives, proposed final criterion examinations, sample instructional strategies, etc. (V). These are presented to the various target and consultant groups for agreement, review, and modification (3). Following this review, production of specific training materials begins. This production actually becomes a two-fold process for the authors. First, they write the particular materials (4a). This may require a further delineation of learning objectives as well as the construction of instructional sequences (W). At the same time, they must convey to the programming staff (E), in this case, the NAVTRAEQUIPCEN staff, their intentions regarding formatting, sequencing, diagnostic branching, data collection and summation, etc. (4b).

The programming staff takes over from the authors at this point in the overall process using the specific materials and proposals of the authors. They undertake the necessary programming, coding, materials production, etc. Within the PLATO IV system, these activities (5a, 5b) occur almost simultaneously. Any specific action could be accurately labeled with one of these numerics, but essentially, there is no prescribed systematic order in which they should be or are undertaken. The outputs of these activities are the lessons within PLATO and the supporting hardware for them, such as slides, projector, microfiche, etc. (X), which together operate as the course of instruction (Z). In the PLATO IV system, there is no separate laguage processor (Y) which the programming staff must use. Translation from the high-level TUTOR language commands is accomplished within the system. The programming staff tests and revises the course (6) until it is the optimal balance between what the authors wrote and proposed and what the particular system in use is capable of reliably reproducing.

The course may be submitted to the authors (7a) and trainers (7b) for additional review. Some tryouts of the course are conducted using students from the target population (8) and data from these trials are provided to the authors (9) to aid in the validation of instruction and provide direction for additional revisions of the course. These revisions would entail repeating the entire cycle with basically the same groups involved in developing the same types of products using the same activities.

Thus, figure 2 is a useful, if ideal, representation of the kinds of activities and the relationships that are part of developing a CAI course. The need for coordination and feedback is clear. Ideally, the authors can propose conventions to the programming staff who try to apply them within system parameters and constraints. The programming staff gives the authors immediate feedback on the degree to which conventions can be adopted as proposed and the authors could modify present and future materials accordingly. Also, ideally, the authors give the programming staff immediate feedback on those materials that get produced to clarify content and conventions so that possible modifications can be made quickly. In reality, this coordination proved difficult, due to the geographic separation of the two staffs (Ann Arbor and Orlando).

Also, in terms of the real activities and participating groups which the figure depicts, for this project one could add two more groups. The first might be termed "CAI system developers" and would basically interface with the programming staff at various phases of their activities. Their inputs would include: (1) basic instruction in the PLATO IV system and its capabilities as well as instruction in coding skills; (2) advice regarding the feasibility and implementation of various conventions proposed by the authors; (3) advice regarding efficient utilization of the system; and (4) reviews of coding and programming strategies. These inputs were crucial to the programming staff, yet often they were slow and even nonexistent. The result was a great deal of frustration and a slow-down in feedback to the authors.

The second group which one could add to the figure might best be termed "sinister forces" and would interface at various points in the figure. These forces made themselves known through such effects as equipment failure, late deliveries, lightning striking twice in the same place (causing circuit problems in PLATO terminals), fuzzy slides, etc., all of which added to the frustrations and conditions which kept this project from operating in the ideal cycle which the figure depicts. It is hoped that the experience of this past year will serve to make expectations more realistic as future courses are developed by ISR and NAVTRAEQUIPCEN staffs.

PILOT STUDY. Prior to the actual pilot study, a trial run of the training materials was conducted using four men who had just completed their company commander school. This trial run allowed an initial check on four aspects of the overall training system:

a. Realism of the training materials;

b. Independence (self-explanation) of the training materials;

c. Feasibility of the data collection and retrieval techniques; and

d. General reliability of the PLATO system during on-line operation by students.

In the debriefing of these four subjects, their general reaction to the materials presented was quite positive, and the materials were reported as realistic and self-explanatory. Based on some recommendations received, modifications in the training materials and in the data collection procedures were made. The reliability of the PLATO system caused some concern during this trial run. This suggested the need for some monitoring activity by someone who could restart the student, if necessary, when the system went "down." In fact, this was needed several times during the pilot study.

The pilot study was planned and conducted to provide preliminary indications as to the value of the developed interpersonal skills trainer, and to test the methodology to be used for future experimental evaluation of such training. The pilot study included all procedures and instruments which would be needed for a large-scale experimental design. The design permits the assessment of the amount and type of changes occurring in company commander and recruit performance as a result of the training provided in the experiment.

Specifically, individuals from two training groups of new company commanders were randomly assigned to either an experimental (E) or control (C) group, resulting in an N of 6 for each group. Because of the exploratory nature of the study, small experimental and control groups were used. Rather than use the limited resources of the contract to emphasize a large data collection effort, it was felt that the many unknowns connected with the project warranted a strong developmental approach.

Following completion of company commander school, all of the subjects took the pretest and answered the demographic questions on the PLATO terminal. The General Classification Test (GCT) scores for all subjects were also obtained. Those demographic data which were used in the analyses are presented in table 5 in appendix C. The pretest provides a measure of the initial skill level in the selected skill area by asking for both open-ended and multiple-choice responses to situations presented on the user terminal of the PLATO system. The pretest was identified as session 1.

Those subjects in the experimental group then continued with training, going through sessions 2, 3, 4, and 5. Session 5 contained the posttest. Total time for all five sessions averaged three hours. Concurrently with session 5, the control group also took the posttest. For a review of the pretest, training and posttest materials, see appendix A. The results of the skill training performance (pretest, training and posttest) are presented in table 1. Some data for control subjects was not collected (posttest), due primarily to poor coordination within the research team. The pretest and posttest scores for the open-ended items are the number of times a rule of feedback is used incorrectly -- in other words, the number wrong. The training score (for experimental subjects) is an average of the percentage of correct first responses to each response request in the various training situations -- corrected for the amount of remediation. The training situations consist of the materials represented by the blocks between the 1st and 2nd gunnery game in figure 1.

After completion of their interaction with the PLATO terminals, the company commanders received their recruit companies, working with them for nine weeks. At the end of the first week of training and during the seventh week of training, a survey to assess company commander feedback performance was administered to 50 per cent of the recruits in each of the companies under study. An example of the survey instrument is included as appendix B. Item means and standard deviations were computed for each company for the first and second administration. These means are listed in tables 6-9 in appendix C. An all-survey mean was also computed for each company for the first and second administration (S1 and S2). The results are listed in table 2. Some items were excluded from this all-survey mean because they were not behavioral indicators, but asked for perceptions of ideal conditions and demographic questions. In other words, only questions which ask for recruit perceptions of company commander behavior were included. This portion of the survey was an attempt to measure company commander on-the-job performance of feedback behavior through tapping the perceptions of the recruits in each company.

The results for the pilot study are graphically presented in figure 3. Experimental subjects were significantly better than control subjects on the first administration of the survey, but not on the second. It is interesting to note that the one experimental subject (E1) who scored below the controls was one of the two experimental subjects whose pretest/posttest score did not improve. The significant difference on these survey measures, which are specifically addressed to the skill area which was trained, is evidence for the effect of the training experience.

TABLE 1. SKILL PERFORMANCE: PRETEST, TRAINING AND POSTTEST SCORES

	Pretest		Training	Posttest	
	Open-Ended Error Score	Fixed Choice Error Score	Score % Correct	Open-Ended Error Score	Fixed Score Error Score
E1*	5[1]	4[2]	75[3]	7	2
E2	6	4	85	3	3
E3	8	6	84	2	1
E4	5	4	79	0	2
E5	10	6	75	4	5
E6	3	2	84	4	1
C1	1	4		--	--
C2	6	4		--	--
C3	11	6		--	--
C4	7	6		--	--
C5	10	4		10	4
C6	5	1		4	6

[1]The number of times a rule of feedback is used incorrectly.

[2]The number wrong out of 9 situations.

[3]An average of the percentage of correct first responses made in each of the various training situations--corrected for the amount of remediation.

*Company numbers and company commander names have been omitted to preserve confidentiality. E represents experimental subjects and C represents control subjects.

TABLE 2. ON-THE-JOB PERFORMANCE MEANS AS MEASURED BY THE SURVEY

Company #	First Administration (S1)	Second Administration (S2)
E 1*	3.28[1]	3.16[1]
E 2	3.99	3.98
E 3	3.72	3.65
E 4	3.88	3.74
E 5	3.81	3.50
E 6	3.88	4.13
C 1	3.67	3.36
C 2	3.63	3.27
C 3	3.39	3.80
C 4	3.62	3.59
C 5	3.53	3.16
C 6	3.54	3.72

*Company numbers have been changed to preserve confidentiality. E represents experimental companies and C represents control companies

[1]This number is a survey mean computed by averaging behavioral item means for each company. Higher numbers denote better performance.

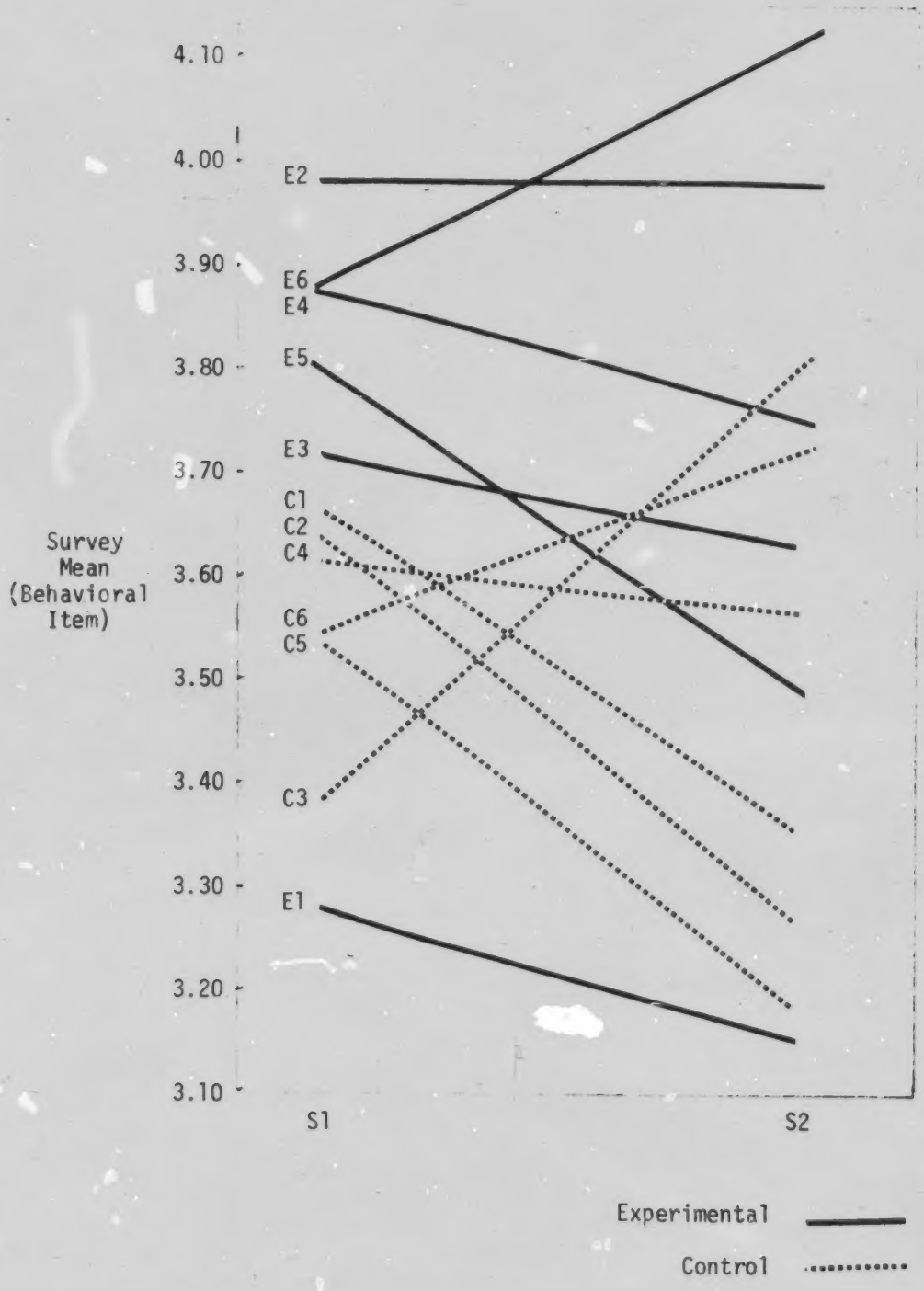

Figure 3. On-The-Job Performance As Measured On Two Administrations Of The Survey

Another on-the-job performance measure was developed by examining all behavioral survey items from the first administration to identify those on which the experimental and control subjects were significantly different. Five such items were found (they are indicated in appendix B) and their means combined to provide a third on-the-job performance measure, S1'. This new measure was then correlated with other performance and criterion measures.

Organizational criteria consisting of Military Evaluation Department (MED) scores, sick call rates and dropout rates were collected for each company. Also, the mean GCT score for each company was obtained. Table 3 presents this information. MED scores represent an evaluation of recruit performance in a number of areas. Because the companies used in the pilot study came from different training groups and received their MED scores under different conditions (i.e., some were evaluated before RTC's consolidation with WAVE recruit training), it was decided that standardized MED scores would be a more meaningful statistic to use in analysis. Sick call rates were obtained simply by counting the number of "walking chits" to sick call and the chaplain given out by each company. Dropout rates were obtained by counting the number of recruits permanently lost from each company during training.

As an aid in the analysis of these results, two kinds of statistical tests were used. Experimental and control subjects and companies were compared on most measures, using a one-tailed t-test. Also, many measures were correlated with each other; a few were not because the possible relationships to be found were not considered relevant to the questions at issue in this study (e.g., training score versus company demographics). The results of these tests are presented in table 4.

To summarize the statistically significant results briefly: (a) Experimental and control subjects were significantly different (at less than the .05 probability level) on the first survey administration (Experimental subjects were perceived by their recruits as having a higher feedback performance skill level on the job than control subjects); (b) Performance on the training materials (training score) was significantly related to on-the-job performance as indicated by the second survey administration; (c) Performance on the posttest was significantly related to on-the-job performance indicated by the S1' measure (that is, the fewer errors made on the posttest, the better performance was reported in S1'); (d) A significant relationship also was obtained between the first and second administration of the survey (S1 and S2).

With regard to the general absence of significant relationships in table 4, it should be remembered that, due to the small number of subjects, an extremely high correlation is necessary for a significant effect.

TABLE 3: COMPANY MED SCORES, SICK CALL RATES, DROPOUT RATES, AND GCT SCORES

Company #	MED Scores	Standardized MED Scores	Sick Call Rates	Dropout Rates	GCT Scores
E 1*	3.34 [1]	- .1398	101 [2]	17 [3]	52.1
E 2	3.32	+ .0476	-	25	48.4
E 3	3.29	-1.0029	125	14	48.6
E 4	3.67	+1.5107	89	18	52.4
E 5	3.18	+1.0000	-	26	51.6
E 6	3.44	+1.1573	161	23	49.0
C 1	3.53	-1.5008	-	12	49.8
C 2	3.55	- .4437	-	20	51.0
C 3	3.44	- .7087	136	27	50.8
C 4	3.70	+ .8270	-	28	48.9
C 5	3.67	-1.3490	-	20	50.6
C 6	3.48	- .1695	-	28	47.7

*Company numbers have been changed to preserve confidentiality.

[1] Average of the 5 MED evaluations (Highest possible score = 4.00)

[2] The total number of "walking chits" issued for visits at "sick call" and "chaplain."

[3] The total number of recruits who permanently left the company - for any reason.

TABLE 4. RESULTS OF CORRELATIONS AND T-TESTS FOR FOUR CLASSES OF MEASURES

(N=12 unless otherwise noted)	Company Commander Demographics			Skill Performance			On-The-Job Performance			Company Performance		Company Demographic
	CC GCT	Navy Experience	Supervisory Experience	Pretest Score	Training Score (N=6)	Posttest Score (N=8)	S1	S1'	S2	MED Score	Drop-out Rate	Company GCT
CC GCT		---	---	-.41[1]	-.03	-.44	.35	.55	.20	.07	-.10	---
Navy Experience			---	.15	.69	-.07	.35	-.05	.29	..44	.29	---
Supervisory Experience				.32	.50	.29	.23	-.12	.34	.08	.48	---
Pretest Score					-.25	.22	-.23	-.16	-.16	-.11	.33	---
Training Score (N=6)						.62	.60	.53	.82*	-.26	-.03	---
Posttest Score (N=8)							-.53	-.61*	-.29	-.26	.51	---
S1								---	.59*	.48	.03	---
S1'									---	.22	-.25	---
S2										.49	.44	---
MED Score											.44	.18
Drop-out Rate												-.27
Company GCT												
Value of t for Experimental vs. Control	.11	.71	.00	.24	---		1.81*	---	1.07	.84	.62	.59

*Significant at .05 level

[1]Data in columns above dashed line are Pearson product-moment correlation coefficients between row and column headings.

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SECTION IV

DISCUSSION

In analyzing the results of this type of study, two general kinds of questions must be raised. The first questions are concerned with any similarities or differences between the experimental and control groups. The second questions regard the relationships among the various measures obtained and any evidence for the effects of training.

In this experimental design, there are four classes of measures available for these analyses. They are: (1) demographic data for both experimental and control subjects and their respective recruit companies; (2) skill performance measures (training); (3) on-the-job performance measures; and (4) company performance measures (see table 4).

At this point, it seems worth reemphasizing the developmental nature of the activities conducted under this contract. Along with generating some training materials in the area of interpersonal skills and utilizing PLATO to implement them, one objective was to establish an experimental design and test it by collecting data and executing any proposed statistical analyses. It is this 'run-through' of the analysis phase of the design that will be discussed below. Thus, the analyses are being done less as a test of the effectiveness of training than as a means of gaining any insights that might be available into the feasibility of the data collection and analysis designs.

One of the primary questions which must be raised before any examination of training effects is undertaken concerns any systematic similarities or differences between the experimental and control subjects on parameters where ideally they should be similar. Two kinds of evidence can be used to make this determination: demographic data and pretest scores on the training materials. In the pilot study, a comparison of experimental and control subjects on GCT scores, supervisory experience, Navy experience, and pretest performance indicates no significant difference between groups (see table 4). Apparently, random assignment of subjects to experimental and control groups is feasible and can be retained in the experimental design.

A related question concerns the similarity of experimental versus control companies. Once again, using a demographic GCT measure, no significant difference was found.

Of course, there are areas where one would hope to find significant differences between experimental and control groups. In a larger study of potentially greater impact, these would include skill performance, on-the-job performance, and, ideally, company performance. On skill performance, as indicated by posttest scores, experimental subjects did in fact do better than controls. It must be remembered, however,

that data for six experimental and two control subjects were being compared. Nonetheless, if all data were available, this difference would serve as evidence of the effect of exposure to the training materials. Further evidence of this effect can be seen in the significant difference between pretest and posttest performance by the experimental subjects alone ($t=2.41$, $p<.05$).

In the third group of measures obtained -- concerning on-the-job performance -- the experimental subjects did seem to benefit from training to the extent that recruits perceived them as more skillful than control subjects. This difference was less evident at the second survey administration -- perhaps indicating some tendency to revert back to normal behavior. In future efforts, some type of follow-up training program might prevent some of this slippage.

In the final area, company performance is indicated by MED scores and dropout rate. Because of the low return of data and their unwieldy nature, measures of sick call rates were dropped from the analysis. In the pilot study, there were mixed results. The experimental and control companies were not significantly different on dropout rate or on standardized MED scores. However, given the multitude of uncontrolled conditions, behaviors, evaluations, etc., which affect those overall MED scores, it seems unnecessarily harsh to dismiss the value of training because of the absence of a significant difference.

Given a larger sample, other interesting analyses could be done. For example, do training effects differ by sub-units within the training materials? It might be that some training materials or areas are more effectively utilized than others. Also, it would be useful to pursue differences in training performance and how these differences might relate to on-the-job performance. These potential areas of study should be pursued in the expansion of this pilot study.

It should be noted that several problems occurred in this pilot effort with regard to conducting the training and collecting the data. First of all, it proved somewhat difficult to obtain subjects. This necessitated using people from two different classes of company commander school. Aside from possibly receiving different training at their own school, these new company commanders went on to push recruit companies in different training groups, one of which was formed under the new consolidated system of training both male and female recruits. These differences had a potential effect on the data being collected, especially MED scores

Another set of problems centered around scheduling and coordination. At the posttest session, only two controls were tested. Also, walking chits for only five companies were obtained. It is felt that better

coordination with RTC, especially in the form of letters and published schedules should do much to alleviate these kinds of problems.

A final problem arose with the walking chits. Aside from the fact that only a few of the companies in the study saved their walking chits, the data they generated were very unwieldy. Counts were made of the number of chits authorizing visits to sick call or the chaplain as an indicator of recruit attitudes and morale. Unfortunately, there was no way to reliably differentiate actual medical problems from "malingering" or counseling sessions from choir practice. It was decided that in the future our data collection efforts would be modified to try and differentiate between causes of leaving the company. These data were disregarded in the analyses.

In terms of conclusions about the training which are warranted by these analyses, it can be said that the training experience appears to have had effects on posttest performance and some on-the-job performance. Training had no apparent effect on company performance, but this result must be considered in the light of the pilot nature of the project and the minimal reasonable impact of only three hours training experience on measures which are determined by complex factors.

SECTION V

SUMMARY AND IMPLICATIONS

This project represents a first step towards evaluating the PLATO IV system in relationship to training interpersonal skills. Company commanders at the Recruit Training Command in Orlando, Florida, were trained in the interpersonal skill of giving effective feedback. There were many unknowns connected with such an effort: the capabilities of the PLATO IV system; the interpersonal skills relevant to company commanders and at least somewhat supported by the organizational climate (so as not to be immediately extinguished); and the feasibility of training social skills using computer-assisted instruction /simulation. For these reasons, only one interpersonal skill was selected for training and, in the preparation of training materials, the first emphasis was in areas well within both the present capabilities of the PLATO system and the staff's programming expertise.

Some problems occurred. For a major portion of the contract period, there was only one terminal in Orlando. This slowed down the learning that could take place. Also, the exploration of the PLATO system and the TUTOR language seemed to follow a trial-and-error mode. This is not a very effective method of learning. More direction and coordination would have been helpful. The PLATO system's periodic breakdown was also a problem area. This especially caused difficulties in the collection of student data--as the data was lost each time the system "went down."

Another major difficulty throughout the project period concerned the subject population. The Navy is a complex organization with an environment and tasks very different from civilian organizations. Thus,the role of a Company Commander in the Navy is not easily comparable to the previous work done in the civilian sector around supervisory leadership and training. Also, there was little initial motivation on the part of some company commanders to learn and improve their leadership ability. Rather, some company commanders perceive that they are rewarded by the system for behavior incompatible with the goals of the training program. Also, they serve as leaders of a group that has a relatively short life-span, so that possible harmful long-term effects of deficient interpersonal skills mean little in changing or motivating the CC's behavior.

Finally, the PLATO capabilities had some significant shortcomings. Specifically, the inability to interpret open-ended responses constrained the simulation and practice potential of the training materials. Also, the poor quality of visual images connected with the use of the random-access microfiche limited the use of slides and visual representations of relevant situations.

In spite of the many problem areas encountered, substantial progress has been made in this present project. Project staff have gained an understanding of the PLATO system and learned the TUTOR language. Observations of interpersonal skills in relationship to company commanders were collected. The training materials developed were compatible with the PLATO system and utilized its basic CAI capabilities. Also, all of the steps involved in an experimental evaluation of PLATO were outlined and the necessary ingredients completed.

Based upon the pretesting of the training materials, and on the debriefing of the experimental subjects, the training materials developed for the skill of giving effective feedback are perceived as realistic and motivating. Also, learning does result, and training does seem to be applied on-the-job, at least as measured by the first administration of the survey. The coding expertise of the NAVTREQUIPCEN staff is growing and their ability to handle out-of-the-ordinary materials and exercises is improving. However, the high turnover of coders may be problematic.

Having taken a difficult first step, the subsequent steps promise to be easier and more productive. With much of the initial groundwork in the subject population and in PLATO programming in place, more time and effort can be turned to the development of training materials and the optimization of the use of PLATO as a training approach. This is the premise of a new proposal--to expand in these two major directions and build upon work previously done.

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Appendix A - Training Materials

These training materials are only a "paper" approximation of the training programs that a student would view on the PLATO user terminal.

INTRODUCTION

(Student is met at the room entrance and asked to sit in front of the terminal. He is told that he will be here about 1 hour. If he has any questions or problems -- such as "down-time" -- he is to call on the phone for assistance. To begin, the student presses Next.)

Please type in your first and last name. When you have finished, press Next.

This training program will help you to become a better Company Commander. The program consists of a number of exercises that you will do while sitting at this terminal. Since this program is still being developed, there are still many things that would be helpful to know about the company commander job. Even though you are still learning yourself, please help us by completing the first portion of this training program -- which asks about your perceptions of what to do in certain situations.

Press Next

GENERAL BACKGROUND

Some information about your general background would be useful. Please answer the following questions by selecting the choice that best describes you.

1. What is your rank?

   a. E6 b. E7 c. E8 d. Other

2. How many companies have you pushed as a Company Commander in the past?

   a. 0 b. 1 c. 2-4 d. 5 or more

3. How long have you been in the Navy?

   a. 0-10 years b. 11-15 years c. 16-20 years d. 21 or more years

4. How old are you?

   a. 20-30 yrs. old b. 31-40 yrs. old c. 41-50 yrs. old d. 51 or more yrs. old

5. How much education did you complete?

   a. grade school only b. high school only c. some college d. college degree

SKILL MEASURE

There will be three general situations presented to you. Within each situation, many events occur. After some of these events, a Company Commander might say or do something. After others, he might typically say nothing. As a Company Commander, if you would respond following a given event, press the Star Key and type in briefly what you would say or do. If you would not respond following the event, press Next.

For example, the following event is presented: a recruit walks into the barracks with his hat on. If you wouldn't say anything, press Next and wait for the next event. However, if you would say or do something, press the Star Key and type in your response, such as: "Hats off in the barracks" or "Have him do fifty push-ups." Then press Next.

The first situation concerns some teaching occasion such as marching, making a bunk, etc. and contains 7 appropriate events -- including some for which feedback is not appropriate.

The second situation concerns a locker inspection by the Company Commander, during which the following events occur:

(1) one compartment is dressed to the wrong side

(2) everything in a locker is O.K. except for the gym shoes

(3) the next recruit is the one who fouled up in marching yesterday

(4) locker a little sloppy -- nothing specifically wrong

(5) everything shipshape

(6) recruit is very large, so his clothes all fit snugly in the locker

(7) Jones is on sick call -- his locker is a mess

(8) hat is not stencilled correctly (recruit has been told about it twice -- once by squad leader and once by RCPO)

The third situation concerns an informal IG period with the Company Commander walking around casually and the recruits doing various things, such as:

(1) group of recruits writing letters home

(2) Jones is back from sick call and is straightening his locker

(3) six recruits listening to music in the lounge

(4) Perkins has cut his face again while shaving

(5) Yeoman is updating the MED ratings on the wall

(6) work party is goofing off

(7) watch changes

FIXED CHOICE TEST
WHEN & HOW (should)

Finally, in this last set of exercises, you will be presented with a few more situations. After each situation, several possible responses will be shown. Choose one response which you think should be made in that situation.

1. Harris' blanket is folded upside down on his bunk.

5	a.	Say nothing.
2	b.	"Get your bunk squared away."
1	c.	"Your blanket shouldn't be upside down like that. Fix it."
3	d.	"Can you tell me what's wrong with your blanket?"
4	e.	"Do ten push-ups."

2. A mock locker inspection is planned for 4th period. The RCPO reports that several recruits have not returned from sick call.

1	a.	Say nothing.
2	b.	"I expect those mama's boys to be back on time."
3	c.	"If you can't keep better track of this company, how am I supposed to teach them anything?

3. Kowalski's locker is shipshape.

4	a.	Say nothing.
1	b.	"That locker would get a 4.0 at MED inspection."
3	c.	"You're not as big a jerk as I thought."
2	d.	"Keep up the good work, Kowalski."

4. Johnson has his notebook in his pocket backwards.

4	a.	Say nothing.
1	b.	"Your notebook is backwards, recruit."
2	c.	"Get your notebook stowed correctly, recruit."
3	d.	"Your notebook just cost you 25 jumping jacks. Let's go."

5. Yesterday, Fisher's bunk was too loose, the hospital corners were loused up, and his blanket was folded wrong. Today, only his blanket is wrong.

4	a.	Say nothing.
3	b.	"If you can make your bunk properly, why can't you stow your blanket right?"
1	c.	"Your bunk's looking much better, but your blanket still needs work."
2	d.	"Your blanket is not folded correctly."

6. Thomas is marching out of step.

4	a.	Say nothing.
2	b.	"Get your ass in gear, Thomas."
3	c.	"Well recruits, it seems Thomas is the only one of you who doesn't know right from left."
1	d.	"March in step, Thomas."

7. Everything in Bradshaw's locker is O.K., except for his gym shoes.

4	a.	Say nothing.
2	b.	"What's wrong with that locker?"
1	c.	"Put your left shoe on top."
3	d.	"You can't even stow your gym shoes right!"
5	e.	"That looks good, recruit."

8. Hunter's hat is not stenciIled. (He's been told about it twice, once by squad leader, once by CC.)

4	a.	Say nothing.
2	b.	"How many times have I told you to stencil that hat? I don't want to tell you again."
1	c.	"Your hat should be stenciIled by now.".
3	d.	"Let's see 100 jumping jacks."

9. Young's locker looks a little sloppy, but nothing specific is wrong.

2	a.	Say nothing.
4	b.	"That's OK; it's probably as good as you can do."
3	c.	"Good job, recruit."
1	d.	"That looks OK, Young, but you need to try a little harder."

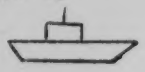
This pretest requires a score. There are no confirmations after responses. Judge the response and assign the appropriate numerical value to it. Total the values for a total score. The lower the score, the better the performance. A perfect score is 9.

INTRODUCTION

Leadership is an important skill for working with other people. One of the reasons that you have been selected to be a Company Commander is your ability to lead men. Another important skill is the ability to help others improve their performance and do a better job. This skill is especially important for recruit training, since recruits are expected to learn many new things in a short period of time.

This means that we as leaders, must learn to effectively tell our men when they are not performing correctly, and provide information needed to improve. It also means that we need to tell our men when they perform well. This skill or ability is called giving feedback. There are many different ways to give feedback to someone else. Some of these ways are better than others.

GUNNERY PRACTICE EXERCISE

To illustrate the effects of different ways of giving feedback this gunnery practice exercise has been developed. The target is another ship and is represented by this figure on the screen  To fire your weapon, push the F key. To correct your fire, use the directional arrow keys. You can press up to two arrows between each firing. (We also might want to add a magnitude capability. Press the arrow once for a little change; two or three times in a row for a greater change.) The first target will be used for an example - to make sure that everything works properly. You will be able to see exactly where your shells are landing.

Press Next.

(Show the target.)

To begin, press F.

(Show an X that isn't very close to the target.)

Now press the desired directional arrows, and press F again. Continue this process until you hit the target.

(When the target is hit, show it exploding and print "On Target".)

Now that you are familiar with the process, a few changes need to be added. First, the target will only be within range for a short period of time. After that time, if you have not hit the target, a new target will appear. A clock in a corner of the screen will show you how much time remains for each target. Second, you will no

longer be able to get direct feedback on how well you are doing. A "spotter" on the bridge will observe each shot and relay the message to you. Finally, a score will be kept listing how many targets were hit and how many were missed.

Press next.

Here is your first target. Fire when ready.

(Press F)

You are low and to the right.

(If he presses anything while waiting for feedback, write: "Wait - your spotter is still checking your last shot.")

(Presses directional arrows and fires again.)

(General feedback) - That's better!

(Then erase target, score kit or miss, and present next target - different location.)

(Press F)

Spotter is busy. If you want to know how you did, call the target officer by pressing 0.

(Press 0)

This is the target officer. Please check what you need from the following list by touching the desired aumber:

1. My weapon won't fire. Send repair crew.
2. Lost sight of the target, need a new fix
3. Information about the last shot

(pushes 3)

Just a minute - let me check.

(Delay of five seconds)

Your last shot was high and to the right - about here on your screen. (Plot on screen, then remove when he presses the next F.)

(Do another target in much the same way.)

You probably have noticed that the feedback being given you has been poor. This can be frustrating. It is also difficult to improve and perform correctly under these circumstances.

Let's try again with a spotter who gives very effective feedback. Press F when ready.

(Show target and each shot as it is fired.)

(Continue with 3 or 4 targets.)

As you can see, as your feedback improved, so did your aim and your ability to hit the target in the specified time.

Now that we understand the importance of feedback, it is appropriate that the rules of effective feedback be taught. These rules emphasize the different aspects of giving helpful feedback.

RULE #1

Direct-Indirect

For feedback to be most effective, it should be given directly, rather than indirectly. In other words, telling someone personally how he performed is better than having someone else tell him, or having information posted. The specific situation or the need to use the chain of command might make direct feedback difficult. In these cases, indirect feedback is acceptable, helpful and certainly better than no feedback at all.

For example: RCPO sees recruit with ID tags worn improperly and tells CC. CC then calls in recruit and informs him that he is wearing his ID tags wrong and to correct this.

Another example: Company has barracks inspection and the scores are posted on the wall. CC discusses the scores with the company and talks about where they did well and where they need to do better.

This is an example of direct feedback, since the CC did not simply post the scores.

Read each of the following examples and indicate whether feedback was given directly or indirectly:

a) While taking the company to class, RCPO handled a difficult situation well. CC noticed this and tells RCPO he did a good job.

[] Direct [] Indirect

b) Academic scores are posted on the wall by the yeoman.

[] Direct [] Indirect

c) CC notices Murphy's locker is fouled up. CC sees Murphy's bunkmate and tells him to straighten Murphy out.

[] Direct [] Indirect

[Add simple confirmations:

For a right answer - "You are right!"

For a wrong answer - "Wrong. This is an example of (direct) (indirect) feedback."]

There are six rules to be learned about giving feedback. After each rule is learned, it will be added to a Rule Review List for future references. If you should ever want to review the rules, press _____ and this list will appear as a reminder.

RULE REVIEW LIST

Rule #	Most Effective	Least Effective
1	Direct	Indirect

Press next to continue

RULE #2

Immediate-Delayed

Feedback is more effective if it is given immediately following the activity which it concerns, or directly after the activity comes to your attention. Delayed feedback occurs after some time has passed.

An example of delayed feedback is telling a recruit today something about his performance yesterday. (This is still better than no feedback at all, however it would be best if it had been given sooner.)

After each of the following examples indicate whether the feedback was immediate or delayed:

a) CC noticed the RCPO gave an incorrect command while marching to class first period. CC points this out to RCPO during a seventh period IG.

[] Immediate [] Delayed

b) While walking down a row of lockers, CC sees a hat folded wrong and tells nearby recruit to fix his hat

[] Immediate [] Delayed

(Add confirmations - probably a simple right or wrong would suffice.)

The examples used in this rule ask you to select either immediate or delayed as an answer. Many times the feedback given might be some place in between. This is true for most of the rules that will be learned. This rule can now be added to the rule list.

RULE REVIEW LIST

Rule #	Most Effective	Least Effective
1	Direct	Indirect
2	Immediate	Delayed

Press next to continue

RULE #3

Attainable-Unattainable

Feedback should only be given about things a recruit has the power to change. If he cannot do anything about it, the feedback would be useless.

For example, constantly telling a short recruit to stand taller, will not be helpful feedback for him.

The following list includes areas where feedback might be given. Select those areas which are generally attainable:

(No) a) Height of recruit
(Yes) b) Weight of recruit
(No) c) Intelligence of recruit
(Yes) d) How much recruit is learning
(Yes) e) Posture of recruit
(No) f) Size of recruit's feet
(Yes) g) Recruit's locker inspection score

[Add confirmations:

(Right) (Wrong) This is something the recruit can try and change.

(Right) (Wrong) This is something over which the recruit has little control.]

This rule will not be used very often. Most of the times you tell a recruit or a company about their performance, you will describe things they can change. The first two rules learned are more difficult to use. It is important to remember to give feedback youself ("directly") when possible, and as soon after you see something right or wrong ("immediately") as you can.

The three rules learned so far are:

RULE REVIEW LIST

Rule #	Most Effective	Least Effective
1	Direct	Indirect
2	Immediate	Delayed
3	Attainable	Unattainable

Press next to continue

RULES #4

Specific-General

Format: Situation given;
discriminate most specific feedback

It is better to give specific examples of what is wrong or right than to make general statements. Specific feedback is clear, detailed and informs the person exactly what he has done. General feedback only informs the person that something in his behavior is right or wrong.

For example, telling a recruit that his hat is folded incorrectly is more specific (and therefore more helpful) than telling him his locker is wrong.

For each of the following situations, pick the feedback choice that is most specific:

a) Recruit's skivvy shorts are folded incorrectly.

1) "Recruit, stow your shorts right!"
2) "Recruit, your shorts are folded wrong."
3) "Recruit, the fold in your shorts is not a thumb's-width."
4) "Recruit, what's wrong with your locker?"

Confirmation:

If (3):

That's right. This tells him exactly what's wrong.

If (1, 2, or 4):

No, choice 3 is better because it tells him exactly what's wrong.

b) Recruit who has previously scored very low has done well in his MED rating.

1) "I'm proud of you."
2) "You are doing very well."
3) "Your MED scores have really improved."
4) "You're a good recruit."

Confirmation:

If (3):

That's right. You are telling him where he has done a good job.

If (1, 2, or 4):

No choice 3 is the most specific because it tells him what he has done well.

c) Recruit is doing several things wrong.

1) "You are all fouled up -- you can't do anything right."
2) "Your shoes aren't shined. Your pants are folded wrong, making everything else in that compartment wrong."
3) "Your locker is a mess -- your uniform is sloppy."

Confirmation:

If (2):

Right. This choice tells him exactly where he needs to improve.

If (1, 3):

No, this choice is too general. Choice 2 is better because it tells him exactly what is wrong.

RULE #4 Continued

This is a very important rule and should be used as much as possible. Before adding this rule to the rule list, can you remember the other rules we have learned? To see if you are remembering the rules, please fill in this blank rule list by typing in all the rule numbers and the rule names, including the last rule learned (rule #4: Specific-General).

Then write:

RULE REVIEW LIST

Rule #	Most Effective	Least Effective

When you have finished, press Next. If you need help, press help.

(If student presses next, judge to see if he has all 4 numbers in rule # column. If he does, confirm by saying "Good Job. You are doing very well." Then have student go on to next rule. If student does not have all the numbers, send him to the help steps referring to his missing numbers.)

(If student presses help, judge to see if he has written any rules. If not, begin with rule 1. If yes, begin with rule he hasn't done.)

(Helps for the rules)

The first rule talked about the importance of giving feedback directly, yourself, rather than indirectly through someone or something else. Type in 1, then the rule names Directly and Indirectly. Then press Next.

The second rule talked about the importance of giving feedback right away rather than waiting until later. Type in 2, then the rule names Immediate and Delayed. Then press Next.

The third rule concerns what the recruit can improve and what he can't improve. Type in 3, then the rule names Attainable and Unattainable. Then press Next.

The fourth rule emphasizes the importance of giving specific rather than general feedback. Telling a recruit his shirt or compartment is wrong is more specific and more helpful than telling him his locker is wrong. Type in 4, then the rule names Specific and General. Then press Next.

(After each help: Have rule list visible and show him results of typing in rule. Leave help statement visible too until he presses Next. Then judge right or wrong. If wrong - type in correct answer for him. Then judge to see if he is missing any other rule. If so, send him to next rule help needed.

In the above situation, if the student now has completed the rule list, write: "You have now completed the rule list. There are two more rules to learn." Pause and then go on to next rule.

RULE #5

Descriptive-evaluative

Format: Situation given;
Discriminate most nonevaluative
Feedback choice

For feedback to be effective, it should be nonevaluative; that is, it should contain no positive or negative reference to the person himself, but only positive or negative information about his performance.

For example, telling a recruit who has dropped his rifle that he's a stupid idiot is evaluative feedback and should be avoided. (Telling him that dropping his rifle is a dangerous thing to do is nonevaluative, because it is describing the recruit's performance.)

For each of the following situations, select the feedback choice that is descriptive:

a) Recruit has his hat on in the barracks.

1) "I can't stand guys who can't remember to take their hats off in the barracks."

2) "If you can't remember to take your hat off in here, you're dumber than I thought."

(correct) 3) "Hats off in the barracks, recruit."

b) Company has not done well on infantry scores.

1) "You idiots can't do anything right."

(correct) 2) "This company has got to start marching better."

3) "If you can't walk straight, you shouldn't be in the Navy."

c) Recruit tells CC, "I was late from chow because there were no chairs in the lunchroom. CC says,

1) "Lunchroom?! We'll never make a sailor out of you"

(correct) 2) "You mean chowhall, don't you?"

3) "You can't say anything right, dummy!"

(Add confirmations:

For a correct choice, write: Correct!

For an incorrect choice, write: Wrong. There is a choice that is less evaluative. Try again.)

Please add this rule by typing in the number 5 and then the rule names. You can abreviate by using Descr. and Eval. then press Next.

RULE REVIEW LIST

Rule #	Most Effective	Least Effective
1	Direct	Indirect
2	Immediate	Delayed
3	Attainable	Unattainable
4	Specific	General

(After student adds rule to list, go on to next rule. If he presses Next without typing in the rule, write: Please add rule #5 to the list so that you will have it for later references.)

Friendly-Hostile

The general emotional background surrounding giving feedback also influences its effectiveness.

For example, if the recruit is under a great deal of stress, he is less likely to understand what a CC is telling him, and therefore, will not learn how to correct his performance.

From the following list, choose those things which might make the feedback less effective:

(x) -- a) Threats
b) Friendliness
c) Even voice
(x) -- d) Loud voice
(x) -- e) Anger
(x) -- f) Physical exercise (while feedback is being given)
g) Helpful attitude
(x) -- h) Hostility

(Add confirmations - a simple right or wrong should suffice.)

This rule completes the rule list. (Show complete review list.)

You might have noticed that more than one rule can apply to the same situation. For example, feedback could be both delayed and specific. It is not important whether delayed and specific is better than immediate and general. Both examples could be improved. This is our goal. "Least Effective" feedback is still much better than no feedback at all. The ideal situation is to use the "Most Effective" aspects as much as possible.

Press Next.

Besides the six rules, there are two general things to remember about giving effective feedback. The first thing is the difference between positive and negative feedback. We all know how to give negative feedback because for learning to take place, it is important for the recruit to know when he has done something wrong. However, it is also important that he knows when he has done well. To let him know this, you can give him positive feedback.

Positive feedback shows approval for behavior which is considered appropriate.

For example: A recruit has improved on his academic rating. His CC tells him "You really came up on the academic rating this week. Good work.!"

Think of an example of positive feedback for each of the following situations. After you have thought of an example of what you could say, press Next for an example of what you might say.

a) Recruit's locker is in good order.

(CC thinks of an example and then presses Next.)

That locker looks good, recruit.

(Pause 5 seconds, erase everything and put up next example.)

b) RCPO does well in marching the company over to class.

(CC thinks of an example and then presses Next.)

The company looked good on the street, RCPO.

(Pause 5 seconds, erase everything and put up next example.)

c) The MED barracks score is the highest yet.

(CC thinks of an example and then presses Next.)

Company, you are doing better on the barracks inspection. Keep it up.

(Pause 5 seconds, erase and go on to next rule.)

In addition to helping the recruit learn, giving positive feedback also helps motivate him to continue to try to do better. So, using negative and positive feedback with recruits will be more effective than just using negative.

Which of the following situations are examples of using feedback effectively?

(No) ____a) Recruit who was goofing off does much better on his academic rating. CC notes this and hopes to see the level maintained next week.

(No) ____b) Recruit has his sea bag upside down in his locker. CC says, "You will never learn, recruit. Let's have 25 push-ups."

(No) ____c) Company's MED barracks score is up, but MED infantry score is down. CC says, "When are you idiots gonna learn to march?"

(Yes) ____d) Early in training, after some recruits have entered this office incorrectly, recruit enters office doing everything right. CC says, "That was a good job of entering the office, recruit. What do you want?"

(Yes) ____e) After previously having his skivvy shorts, his T-shirts, and his blue jacket folded incorrectly, recruit now has only his blue jacket folded incorrectly. CC says, "That's a better job of folding your skivvies and T-shirts, Wilson, but you still need to work on your jacket."

(We need to add confirmations. After each right answer, write: "You are right. This is an example of trying to use feedback effectively.

After each wrong answer, give the following confirmations:

a) This is not effective feedback because the recruit doesn't know what you see or hope unless you tell him.

b) This is not effective feedback because the recruit doesn't find out what he did wrong or how to do better.

c) This is not effective feedback because the company didn't get positive feedback for doing well on barracks inspection.

(d & e) Wrong. This is an example of effectively giving positive feedback.)

(If three or more are missed, then send the student back through the exercise by writing: "You had some trouble with this rule. Please try it again to see if you understand it better.")

Application of the Rules of Feedback
(Practice A)

The rules for effective feedback have been discussed. Now it is time to practice the application of these rules to various situations where feedback was used. After each situation, answer the questions concerning the feedback given.

Ready to begin? Press "next".

(Series of situations and the specific feedback used -- see pages 65 and 66)

Example format

I - Situation and feedback given.

(delay of 5 seconds)

Do you think this feedback would be effective?

☐ Yes ☐ No

If Student Answers Yes

-- (If yes is correct, then:)

Why? What rules of feedback were used?

(after delay of 15 seconds with no student response, the following statement should flash on the bottom of the screen.)

To review the rule list, press _____.

When you are finished, press _____.

(record responses, judge)

(give specific confirmations required -- see page 64 , and send to practice if need be.)

(present next situation and feedback)

-- (If yes is incorrect, then:)

No. This feedback wouldn't be very effective. Let's see if you can tell why. What rules of feedback were not used?
(to other branch)

-- (If no is correct, then:)

Why? What rules of feedback were not used?

(after delay of 15 seconds with no student response, the following statement should flash on the bottom of the screen.)

To review the rule list, press _____.

When you are finished, press _____.

(record responses, judge)

(give specific confirmations required -- see page 64 , and send to practice if need be.)

If Student Answers No (touch)

Which of these responses would be a more effective feedback for this situation?

☐ a.
☐ b. (see pages 65 and 66)
☐ c.

(give specific confirmations required, see page 64 .)

(push next key)

(Present next situation and feedback)

-- (If no is incorrect, then:)

No. This feedback would be effective. Let's see if you can tell why. What rules of feedback were used? (Go to other branch)

Method of Recording Responses

Rules	Did Choose		Didn't Choose	
	Right	Wrong	Right	Wrong
Direct				
Immediate				
Attainable				
Specific				
Descriptive				
Friendly				

Record each situation number in all applicable columns. When the number of wrongs for any rule is 3 or 6, give practice on that rule after confirmation.

Practice

You seem to be having trouble with the (plug in appropriate rule name) rule. Let's go back and review this rule before we continue with this exercise. (Review rule learning).

Rule List

Rule #	Most Effective	Least Effective
1	Direct	Indirect
2	Immediate	Delayed
3	Attainable	Unattainable
4	Specific	General
5	Descriptive	Evaluative
6	Friendly	Hostile

Confirmations

(Match student responses to "right answers").

(For those that match) -- You are correct in using .....

(For those that don't match) -- You are wrong in using .....

(For those correct answers for which there is no match) -- You also should have used .....

Practice A

I. PL makes improper command during marching. Back in the boat, CC gives him CC Guide and tells him, "You blew it during inspection. You'd better study this some more."

(Gen'l; Delayed)

II. CC is giving instructions on how to fold clothes. He asks for all recruits' attention and tells them to watch. Several recruits near the back are not paying attention. CC sees them and stares at them, but they do not notice. Finally CC yells, "All right you blockheads! Pay attention or you'll be in big trouble!"

(Eval; Host)

3. a. (to company at large) "I want everyone's attention."

   b. "You recruits in the back had better pay attention."

   c. "O.K., one of you guys in the back come up here and show me how to fold this shirt."

III. Recruit comes to office door and knocks. CC is displeased with volume and tells him, "Hit the door jam harder." Recruit does and enters the office.

(Spec; Descr; Dir; Imm; Att'n)

IV. Recruit who has failed inspection is practicing folding his clothes. CC is walking by and says, "That's the right way to fold your pants, recruit."

(Dir; Imm; Att'n; Spec; Descr; Frnd)

V. CC learns from PL that recruit who got low MED scores and was goofing off the day before, is back late from lunch. CC sees him and says, "You are really fouled up, recruit. You'd better shape up or I'll have to put you back a week."

(Indir; Del; Gen'l; Eval; Host?)

VI. During MED inspection, CC walks up behind recruit and lightly slaps him on the arm from behind. CC says, "Stand at attention while being inspected."

(Dir; Imm; Att'n; Spec; Descr; Frnd?)

VII. As Company is forming up to go outside to get their pictures taken, CC says to RCPO, "You'd better get staff moving. You almost got us a street mark yesterday."

(Del; Gen'l)

VIII. During a simulated MED locker inspection, CC sees recruit's hat folded very loosely. CC says, "Look at that hat! You can do better than that."

(Gen'l; Eval?)

3. a. "Your hat needs to be folded tighter."

b. "Have your bunkmate show you how to fold your hat."

c. "You must really be stupid if you can't fold a hat."

IX. During simulated MED locker inspection, CC inspects one recruit's jacket and says, "Neat fold, son." Recruit says, "Thank you, sir."

(Dir; Imm; Attn; Spec; Descr; Frnd)

X. CC has just been looking over individual scores. He sees a recruit walking by the office who has improved his scores. CC says "You're doing a better job, recruit!"

(Del; Gen'l)

3. a. "I didn't think you were going to make it, but you're showing some improvement."

b. "I hope your scores improve as much next week as they did this week."

c. "Your academic scores have really improved, Walker. Keep up the good work."

XI. Recruit has been taking poor notes. CC asks to see his notebook. Recruit gives it to him; CC looks at it and says, "You're taking better notes. Keep it up. Put the next notes here (indicates page) and leave this blank."

(Dir; Att'n; Spec; Descr; Frnd)

Remediation

(After each rule review, the student presses Lab and receives the following practice:)

Rate each of the above statements on this (insert rule name) scale by typing in the statement number on the correct blank.

(insert rule name) _____ _____ _____ (insert rule name)

(For example, this might be the Direct _____ _____ _____ Indirect scale. Have an arrow at where the subject should first type a number. After each number is entered, move the arrow to the next and final blanks. When he has typed three numbers, judge to see if order is correct. If right, write: "Very good. Press next to continue." If wrong, write: "No, try again.")

(It would be best to keep the three statements on the screen while the student does this rating exercise.)

(Rule #1)

Direct feedback means that it is given in a face-to-face situation. The person who sees someone's performance (either good or bad) tells him about it. Indirect feedback means that something comes between the person who sees the performance and the person who performed. A company commander telling the RCPO to tell a recruit that his locker is messed up is indirect feedback. Many times indirect feedback must be used because of the chain-of-command. However, when possible, direct feedback means more to the recruit than scores posted on the wall or reactions from his squad leader.

Press Next.

Here are three examples of ways to give feedback:

1. CC tells one recruit to give message to another recruit.
2. CC speaks directly to recruit.
3. CC posts message on bulletin board.

Press Lab.

(Rule #2)

Immediate feedback occurs directly following the activity which it concerns. Delayed feedback occurs after some time interval has elapsed. The sooner that a recruit learns why his clothes are folded wrong, the better he will be able to correct his mistakes. If a recruit learns that he is folding his sea bag incorrectly after he has done it that way for a week, it will be harder for him to change than if he only tried to fold the bag once and is corrected.

Press Next.

Here are three examples of ways to give feedback:

1. Recruit is observed marching improperly and is not told until the next day.

2. Recruit enters the CC's office improperly. After conducting some business, the CC tells him he did it wrong and asks him to enter again the right way.

3. Recruit is immediately corrected for an improper salute.

Press Lab.

(Rule #3)

Attainable feedback describes areas of performance where the recruit can improve. Unattainable feedback concerns something the person does not have the power to change.

Here are three examples of types of feedback:

1. You are too small to be a good sailor.
2. You didn't shave close enough.
3. You need to try harder in academic areas.

Press Lab.

(Rule #4)

Sepcific feedback is detailed enough to tell the recruit or the company where they made mistakes. This helps them to improve. Examples also help demonstrate the performance being talked about. General feedback usually only tells the recruit that he has messed up.

Here are three examples of ways to give feedback:

1. Your sea bag is not folded exactly in thirds.
2. Your locker is a mess.
3. You can't do anything right.

Press Lab.

(Rule #5)

Descriptive feedback describes the performance or the job done - not the person who did it. Evaluative feedback contains some positive or negative reference to the recruit or to the company.

For example, below are listed three feedback statements:

1. That's a dumb thing to do, recruit.
2. If I were as dumb as you, I wouldn't show my face in public.
3. Take your hat off in the barracks, recruit.

Press Lab.

WHEN TO GIVE FEEDBACK

Now that you understand the specific rules on how to give feedback, it would be useful to consider some guidelines on when these rules can be applied effectively.

1. Perhaps the most clear-cut guideline for applying the rules is that feedback should be given only in situations that have to do with performance, either the quality of what was done, or the fact that something should have been done and was not. Performance

2. Once it is apparent that there is a performance situation, you must decide whether to give positive feedback, or negative feedback, or both. Remember that positive feedback is more effective than just negative, so it should not be neglected, especially in situations where both types would be appropriate. Positive or Negative Feedback

3. If you decide that negative feedback should be given, another point to consider is whether the desired behavior is attainable. Remember that if the behaivor is unattainable, feedback should not be given. Attainable

4. There are some other guidelines for giving feedback, but they are not so clear-cut as the ones just mentioned. For example, while feedback should be given immediately, there are situations where giving feedback, even though it is delayed, might be more helpful and effective than not giving any feedback at all. Likewise, there may be situations where direct feedback is not possible, but giving indirect feedback might be better than giving no feedback at all. Timely Directly

When To Give Feedback

To give an opportunity to practice when to give feedback, a series of events will appear. After each event, you must decide whether or not to give feedback. If you think feedback should be given, type yes. If you don't think feedback should occur, press next and go on to the next event. You will be given feedback as to whether you are right or wrong after each try.

New recruits are being issued clothing in the RIF building just before commissioning. CC is walking around the tables as the recruits receive instructions for stencilling their clothes. CC sees the following things happening:

--Recruit is stencilling the wrong shirt	Yes
--Time is running short before commissioning	No
--Recruit Smith is briefly asking his neighbor for help	No
--Recruit asks CC if his hat is stencilled correctly	Yes
--Recruit Wilson just finished first again (he always does)	Yes
--Recruit Smith again asks his neighbor for help, causing his neighbor to get behind	Yes
--Since Jones is so small, all his clothes must be altered and this is slowing up the company	No
--Recruit's shirt is wrong on the table; he's about to set the stencil on it	Yes

(Judge after each response. If right, say Right; if wrong, say so also. After last event, continue on to Practice - When.)

PRACTICE - WHEN

(test for should)

Once again, a series of events will be described to you. After each event, you must decide if feedback would be appropriate. As before, if you think feedback should be given, press the -STAR- key. If you should say or do nothing, press -NEXT- and the next event will occur. In this exercise, you will not be told whether you are right or wrong.

The company is on the grinder practicing marching for the first time.

(Yes) --Co. misunderstands order; half the co. turns right, the other half stops.

(Yes) --Co. does very well during infantry inspection.

(Yes) --Co. dresses left when it should have dressed right.

(No) --Bat. Commander walks by.

(Yes) --Conners is carrying his piece backwards (?) with the strap loose.

(Yes) --Co. stands at ease when it has been ordered to parade rest.

(No) --The yellow flag is out.

(Yes) --RCPO handles the company well in getting them to class on time.

(No) --The band strikes up "Anchors Aweigh".

(Yes) --All members of Co. do not halt at the same time.

Give no confirmations: Judge after each response and score right or wrong. Then continue with next event. At end, add up number right for a score. This can be given to the student as follows:

(8-10 right) "You have ___ of 10 right - Excellent!"

(6-8 right) "You have ___ of 10 right - you missed a few, but seem to have the idea."

(0-5 right) "You have ___ of 10 right! Let's practice the other exercise again and then come back to this one for another try."

Slide Set # 1

Example of Instructions

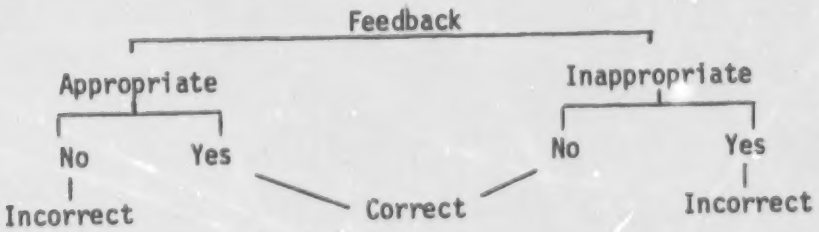
Besides knowing how to give feedback effectively, it is also important to know when to give feedback. The following exercise will allow you to practice deciding when feedback should be given. This diagram represents the barracks; the X represents the Company Commander. Following an IG period on folding clothes, some recruits are still practicing folding clothes in their locker. Others are milling about informally. Pictures will flash on the screen to represent things the CC sees as he walks around the barracks. You are to press the _____ key after each picture where you think feedback would be appropriate and helpful. If you do not think feedback should be given, do not press the key and wait for the next picture. When you are ready to begin, press _____.

Practice?

(Diagram of barracks, with the X beginning to move.)

(Series of slides, each slide followed by a delay of 5 seconds -- perhaps shown by a counter in the corner -- and a movement of the X representing the CC).

(Mechanism to count number correctly given or not given feedback and to identify number incorrectly given or not given feedback).



(After slides, subtract total wrong from total right and compute score).

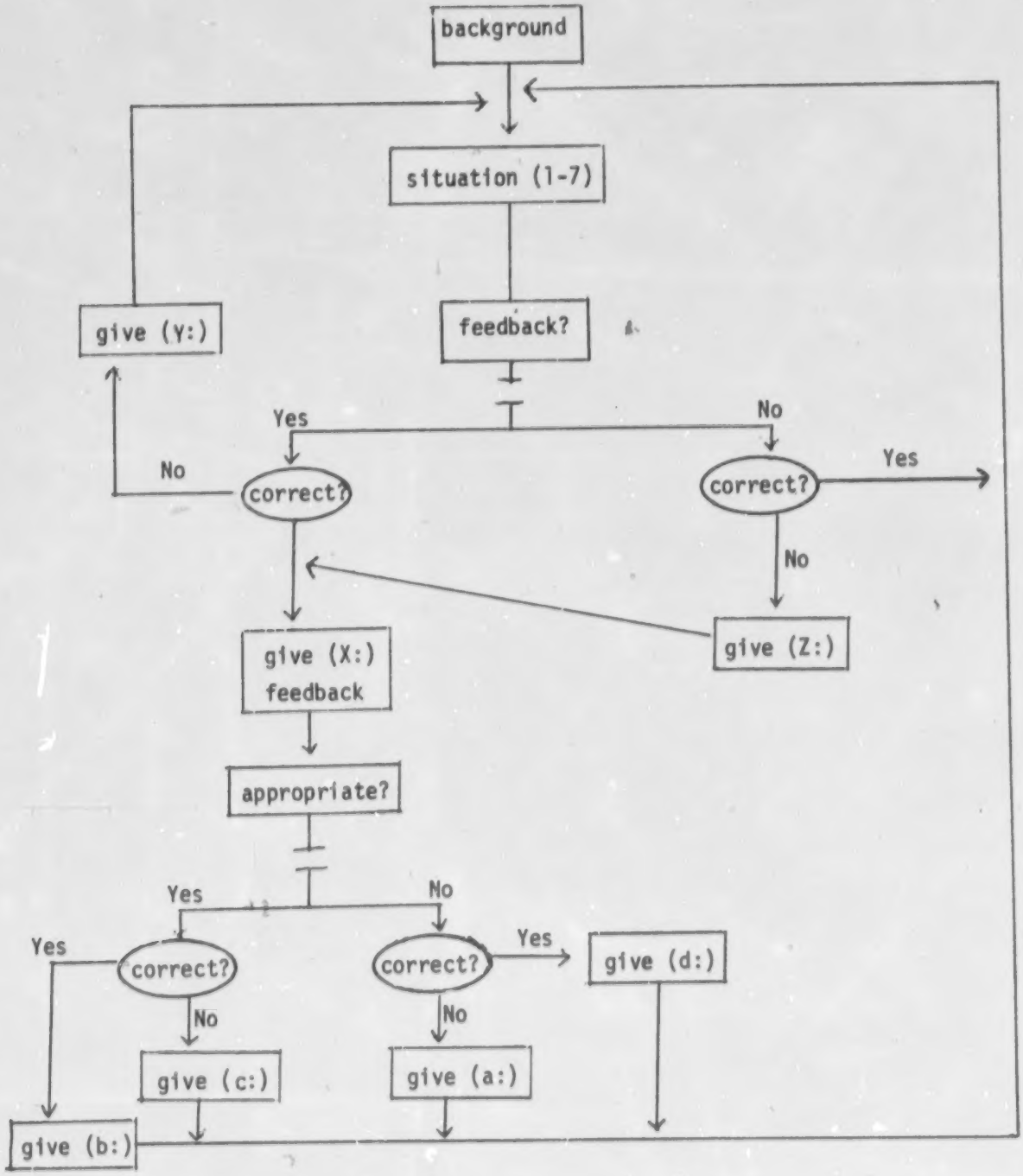
(see flow chart for branching)

(In recording the right and wrong answers, it will also be necessary to remember which events were missed).

SLIDES

1. Recruits standing around Bn
2. Shoes with laces out
3. Clock
4. Skivvies folded wrong
5. Bunk made up wrong
6. Good locker
7. Notebook wrong in pocket
8. Letter home sheet
9. Bad salute
10. Good salute
11. Hat on in barracks
12. Performance board (Kolwyck's scores are up)
13. Rifle rack with rifles dressed wrong
14. Recruit holding flag wrong
15. Recruit outside with no duty belt

PRACTICE B


background
situation (1-7)
feedback?
give (Y:)
Yes
No
No
correct?
correct?
Yes
No
give (X:)
feedback
give (Z:)
appropriate?
Yes
No
Yes
correct?
correct?
Yes
give (d:)
No
No
give (c:)
give (a:)
give (b:)

PRACTICE B

When to give feedback
Discriminate appropriate feedback

1. Squad leader who has been giving unauthorized smoke breaks is called into the office.

   (X) "If you don't shape up as a squad leader, I'm going to can you."

   (Z) It would be appropriate to give feedback in this situation, rather than just punishment for instance, so that the squad leader can improve his behavior.

   (c) Actually, this feedback would not be very effective because it is not specific enough to give the squad leader any useful ideas about how to improve his performance. Also it is quite hostile and evaluative and would probably put the squad leader on the defensive.

   (d) You're right, that feedback would be inappropriate because it is general, evaluative and hostile.

2. Yeoman comes in with a report.

   (Y) Feedback would not be appropriate in this case.

3. There has been confusion about orders. RCPO and Yeoman are called in. They deny responsibility.

   (X) "You're not getting your orders across. You need to make sure that your squad leaders understand them."

   (Z) Feedback would be appropriate in this situation.

   (a) Actually, this feedback is appropriate because it is specific and gives them information about a behavior which they can change.

   (b) You're right, that feedback is appropriate because it is specific and deals with behavior which the RCPO's are able to change.

4. RCPO thinks he messed up during infantry inspection that morning and asks CC about it.

   (X) "Well, you should have kept the company in close order dress right, but everybody makes a few mistakes at the start and overall the company did pretty well."

   (Z) Feedback should be given in this situation because the RCPO could use information that would help him improve his performance.

   (a) This feedback was appropriate because it gave specific information about what error the RCPO had made. It was given directly and in a friendly manner, although ideally it should have been given more immediately.

(b) You're right, this feedback was appropriate since it was specific, direct and friendly.

5. Squad leader reports that Miller still has not got any mail.

(Y) Feedback would not be appropriate in this case.

6. Recruit who answered the phone incorrectly while on watch yesterday is told to report to the CC by his squad leader.

(X) "Haven't you ever used a telephone before? That'll be 10 demerits. You really blew it!"

(Z) Feedback should be given in this situation because the recruit needs to improve his performance.

(c) This feedback would not be appropriate because it is too general and hostile. Also it is indirect and delayed.

(d) You're right, this feedback is general, hostile, indirect and delayed.

7. PL tells you he made an improper command.

(Y) That's right, feedback is not appropriate, because he knows he did it wrong. Teaching is needed here, not feedback.

GUNNERY GAME - Part II

Object of the Game: Destroy as many targets as possible.

Rules of the Game:

1. Targets will be in range for a limited amount of time.
2. With each new target, player will be allowed one 'free shot' and receive initial feedback.
3. Each initial feedback will fail to apply one of the rules for giving effective feedback.
4. Before player may fire again, he must indicate which rule has not been applied in the initial feedback; that feedback will be corrected according to his choice.
5. If the wrong rule is chosen, the same initial feedback will be given and player may indicate another rule.
6. If player wishes to review the rules for giving feedback, he should press -LAB-.
7. When player is allowed to 'fire again', he may correct his shot using the directional arrow keys.

Case of Rule Not Applied	Initial Feedback *	Location of Target	Location of First Shot
1	[This is the fire correction officer. Your spotter reports that] your shot was 100 yds. left and 400 long.	3,5	2,9
2a	[delay of 10 sec.] Your shot fell 200 yds. right and 300 short.	4,7	6,4
2b	[delay of 5 sec.] Your shot fell 100 yds. left and 200 long.	8,6	7,8
3a	[You missed.] (Your shot was 300 yds. left and 100 long.)	4,3	1,4
4b	[You're low and to the right.] (Your shot was 200 yds. right and 200 short.)	1,9	3,7
4c	[Not bad.] (You hit 400 yds. left and 100 long.)	9,2	5,1
5a	[You couldn't hit the broad side of a battleship!] Your shot hit 500 yds. left and 100 long.	2,4	7,2
5b	[You're a real lousy shot!] You hit 200 yds. right and 300 long.	5,6	7,9

* For each case, initial feedback consists of any statement in brackets plus any statement not in parentheses. Corrected feedback consists of any statement in parentheses or not in brackets.

When a player indicates a rule which he believes the initial feedback failed to apply and he is incorrect, he should receive the appropriate following statement plus the same uncorrected initial feedback.

Rule Indicated	Statement
1.	That feedback was as direct as we can get.
2.	We gave you the feedback as quickly as we could process your shot.
3.	Hey come on! You can hit the target!
4.	We can't get much more specific than this:
5.	We weren't evaluating you; we were just trying to let you know how you did.
6.	We were being as friendly as we could!

ROLE PLAY

(This will have to be set up to coordinate two terminals. I'll denote which student should be seeing what in the margin.)

Both

During today's session, you will be taking part in some 'role play' exercises. This requires that there be <u>two</u> students, including yourself, at terminals in the same room. If you are by yourself, call the monitor now.

[*Monitor will give student some 'password' to type to jump him out of this lesson, if need be.*]

If there is another student available for the role play exercises, type 'ready' at the arrow below.

Fine. Press -NEXT- to continue.

Both

Before we get started with these exercises, we'd like to explain a little bit about 'role playing'. In these exercises, you will be given two roles to play. Sometimes you will be told to play the 'Recruit' role and sometimes you will be told to take the role of a Company Commander.

In order to help us assign roles, will the person who is sitting nearest the door [*or some other clear discrimination*] please type 'near' at the arrow below. The person sitting furthest from the door, please type 'far'.

[*'near' = CC in Situation 1; 'far' = Recruit in Situation 1.*]

Thank you. Now we are ready to begin.

Press -NEXT- to continue.

'far' In the first situation, you will be the Recruit. You will be given some background about what the recruit is thinking, some of his attitudes, and his own perception of his performance on a particular task.

In going through the role play, you, in the 'Recruit' role, should try to think and behave as you believe that Recruit with those ideas and perceptions would think and behave. In these situations, the Recruit will be interacting with his Company Commander (as 'role played' by your partner in this exercise) about the Recruit's performance.

[*Press -NEXT- to see rest of page.*]

(*) Situation 1: You are Recruit Davis. It is P-3(?) day. During an I G period, you are standing watch while the company is practicing folding clothes. You were assigned the watch because this morning the CC said you had a perfect locker so you wouldn't need to practice folding your clothes. You felt pretty good about that and are feeling a little smug now that you don't have to practice. You're really dead tired from marching all morning and having to hurry back from chow to stand watch now.

(*) Turn now to your partner and wait for him to say something. When you are both done talking (the conversation may not take very long), press -NEXT- to continue.

'near' In the first situation, you will be the Company Commander. You will be given some background about the situation, such as what day of training it is, what the company is doing, some specific information about a particular recruit's performance on a particular task, and what this recruit's performance has been like in the past.

In going through the role play, respond to this Recruit (that is, your partner who is playing the Recruit) as <u>you</u> would respond.

[*Press -NEXT- to see rest of page.*]

(*)

<u>Situation 1</u>: It is a P-3 *(?)* day. During an IG period after lunch, the company is practicing folding clothes because a lot of them really messed up on a mock inspection you held this morning. After, the inspection, you took the company out on the grinder. Now, as you go toward your office, you notice Recruit Davis, who is standing watch because he didn't need to practice stowing his locker, is slouching and nearly asleep. Also, his duty belt is missing.

What would you say to Davis?

(*)

After your conversation (which may not take very long), press -NEXT- to continue.

Turn now and talk to your partner.

[*Debriefing*]

'far' NOTE: Please answer the following questions as you believe the Recruit you are playing would answer them. Please be honest and frank. Your partner is able to see these questions and the answers you give, but he cannot make any answers himself. He may be asking you questions about some of your answers.

How would you rate the feedback which your CC just gave you?

[] Good [] Bad

How specific was the feedback you received?

a. Not at all; it was too general
b. Not specific enough
c. Fairly specific
d. Very specific

Did the feedback describe what you did or evaluate you as a person?

[] Describe [] Evaluate

Which type of feedback were you expecting?

[] Positive [] Negative [] Both

Which type of feedback did you receive?

[] Positive [] Negative [] Both

[*For 'Neg.' or 'Both'*] Were you given enough information about your performance so that you think you could do a better job?

[] Yes [] Some, but not enough [] No

How helpful was the feedback to you?

a. Not at all helpful
b. Somewhat helpful
c. Fairly helpful
d. Very helpful

How do you feel about the feedback you received? (Check as many as apply.)

a. I felt good about it.
b. I was surprised to get it.
c. I resented it.
d. I felt stupid.
e. I want to try harder next time.
f. I want to forget the whole thing.

Press -NEXT- to continue.

[*Debriefing*]

'near'

NOTE: Your partner will be answering these questions in his role as the Recruit. You will be able to see the answers he gives, but you won't be able to answer them yourself. Feel free to ask him any questions you may have about the answers he gives.

How would you rate the feedback which your CC just gave you?

[] Good [] Bad

How specific was the feedback you received?

a. Not at all; it was too general
b. Not specific enough
c. Fairly specific
d. Very specific

Did the feedback describe what you did or evaluate you as a person?

[] Describe [] Evaluate

Which type of feedback were you expecting?

[] Positive [] Negative [] Both

Which type of feedback did you receive?

[] Positive [] Negative [] Both

[*For 'Neg.' or 'Both'*] Were you given enough information about your performance so that you think you could do a better job?

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a. Not at all helpful
b. Somewhat helpful
c. Fairly helpful
d. Very helpful

How do you feel about the feedback you received? (Check as many as apply.)

a. I felt good about it.
b. I was surprised to get it.
c. I resented it.
d. I felt stupid.
e. I want to try harder next time.
f. I want to forget the whole thing.

[*Info exchange*]

Both Now we'd like to give you a chance to see the information your partner was given at the start of this exercise. Please feel free to discuss the information, especially with regard to the way it may have made you feel or respond.

Here is what your partner saw:

> [*Show 'far' the portion of the Situation 1 page which 'near' had seen that falls between the *'s in the margin.*
> *Show 'near' the portion of the Situation 1 page which 'far' had seen that falls between the *'s in the margin.*]

Share any reactions you might have with your partner. When done, press -NEXT- to continue.

'far' In this next situation you will be the Company Commander. Once again, you will be given some background information about the situation, such as what day of training it is, what the company is doing, some specific information about a particular recruit's performance on a particular task, and what this recruit's performance has been like in the past.

Respond to this Recruit (that is, your partner who is playing the Recruit) as you would respond.

[*Press -NEXT- to see rest of page.*]

(*) Situation 2: It is P-3(?) day. During an I.G. period, the company has been practicing folding their clothes and stowing their gear in their lockers. This morning they really blew the MED locker inspection and you chewed them out pretty well. This afternoon they've been trying harder and you've been pretty patient with them in correcting their mistakes. Foster was goofing off and you chewed him out for not listening to you. Recruit Young is next. He's pretty quiet and usually tries to do his best, but he seems confused sometimes. His skivvy shorts are folded with the wrong seam on top. Everything else is OK.

What would you say to Young?

(*)

Turn now and talk to your partner, then press -NEXT-.

'near' In this next situation, you will be the Recruit. Once again, you will be given some background about the situation, such as what the Recruit is thinking, some of his attitudes, and his own perception of his performance on a particular task.

In going through the role play, try to think and behave as you believe this Recruit with these ideas and perceptions would think and behave.

[*Press -NEXT- to see rest of page*]

(*) Situation 2: You are Recruit Young. It is P-3(?)day. During an I.G. period, the company has been practicing folding their clothes and stowing their gear in their lockers. The company had received a low MED locker inspection score that morning and the CC had been really disgusted and chewed out the company. During practice, the recruits have been doing better, and the CC has been generally encouraging. He has corrected many mistakes and chewed out Foster for not following his instructions. You are pretty sure that everything in your locker is shipshape, but you are worried about your blue jacket because you had trouble remembering how to fold it properly.

(*) Turn now to your partner and wait for him to say something. When you are both done talking, press -NEXT- to continue.

'far' [*Show 'far' the debriefing page the way 'near' had seen it in Situation 1.*]

'near' [*Show 'near' the debriefing page the way 'far' had seen it in Situation 1.*]

(new page)

Both [*Exchange information as in Situation 1.*]

'far' In this situation, you will be the Recruit.

(*)

Situation 3: You are Recruit Pulaski. It is 4-5*(?)* day. Your Platoon Leader has told you that the CC wants to see you. You have heard that the latest MED academic scores have come in and you're afraid that's what he wants to see you about. Last week you had done quite poorly because you hadn't studied enough. The CC talked with you and told you he expected you to study and bring your scores up. You did study more, but you were very nervous when you took the exam and you're afraid you've blown your grades again. You have just entered the CC's office.

(*)

Turn to your partner and wait for him to say something. When done, press -NEXT-.

(new page)

'far' *Debrief*

(new page)

'far' *Exchange info*

'near' In this situation, you will be the Company Commander.

(*)

Situation 3: It is 4-5(?) day. Recruit Pulaski has just entered your office. You had told his Platoon Leader to send him over. Last week, Pulaski did poorly on his MED academic scores. You had been sure it was because he hadn't studied so you talked with him, telling him to study and that you expected him to improve. From his hard card and what you've seen of him, he should be getting 4.0's. This week you saw him studying and he did get up to a 3.5 average, but his score on ship classes(?) kept his average down.

What would you say to Pulaski?

(*)

Turn now and talk to your partner, then press -NEXT-.

Debrief

Exchange info

'far' (*) In this situation, you will be the Company Commander.

Situation 4: It is P-5(?) day. The company is out on the grinder practicing marching for the second time. You have been watching Curtis, who really screwed up the first time and kept turning in the wrong direction. Today he's usually turning properly, but he seems behind and makes the company look sloppy. You have just ordered the company to parade rest.

What would you say to Curtis? (*)

Turn now and talk to your partner, then press -NEXT-.

Debrief

Exchange info

'near' In this situation, you will be the Recruit.

(*)

Situation 4: You are Recruit Curtis. It is P-5*(?)* day. The company is out on the grinder. This is the second time you've ever marched and you hate it and all the drill because for some reason you have always gotten right and left confused (someone once told you it's because you're left-handed). The last time you marched, you turned the wrong way half the time and the CC had fits. He really chewed you out but you kept quiet because you didn't want the company to laugh at you. This time out you've decided that the best thing to do is just to wait half a second after the order is given and see which way everybody else moves. So far you've only made one mistake. The CC has just ordered the company to parade rest.

(*)

Turn to your partner and wait for him to say something. When done, press -NEXT-.

Debrief

Exchange info

Appendix B - Survey Instrument

NOTE: Those survey questions which were included in the computation of the measure S1' (see p. 26) have been indicated with an asterisk (*).

RECRUIT SURVEY
Administrative Instructions

This survey is part of a study sponsored by the Navy in which we are attempting to learn more about recruit training. The survey includes questions about your company commander and your fellow recruits. If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. We want to know what you think. This is not a test; there are no right or wrong answers. Your responses will be anonymous and reported only in combination with those of many other persons. Do not write your name on this survey.

In answering these questions, simply circle the choice closest to how you feel. Similar questions will be asked periodically throughout recruit training. When answering these questions, think of how it has been most recently; for example, during this week. If I can be of any help, please raise your hand. Thank you very much for your cooperation in this effort.

Institute for Social Research - University of Michigan
in conjunction with the
Naval Training Equipment Center

RECRUIT SURVEY

Company _____ (1:1-3) Training Day _____ (1:4-5)

Please circle the number which indicates the one best choice for each question.

	Very little		Some		Very much	
When a recruit talks with your Company Commander, how much does he pay attention to what the recruit is saying?						
1. This is how it is now	1	2	3	4	5	(1:6)
2. This is how I would like it to be	1	2	3	4	5	(1:7)
How much does your Company Commander encourage people to give their best efforts?						
3. This is how it is now	1	2	3	4	5	(1:8)
4. This is how I would like it to be	1	2	3	4	5	(1:9)
How much does your Company Commander emphasize high standards of performance?						
5. This is how it is now	1	2	3	4	5	(1:10)
6. This is how I would like it to be	1	2	3	4	5	(1:11)
How easy to talk to is your Company Commander?						
7. This is how it is now	1	2	3	4	5	(1:12)
8. This is how I would like it to be	1	2	3	4	5	(1:13)
How much does your Company Commander show you how to improve your performance?						
9. This is how it is now	1	2	3	4	5	(1:14)
10. This is how I would like it to be	1	2	3	4	5	(1:15)
How much do you talk with your Company Commander (ask questions, seek advice)?						
11. This is how it is now	1	2	3	4	5	(1:16)
12. This is how I would like it to be	1	2	3	4	5	(1:17)
13. How much are you told what you need to know to do a job in the best possible way?	1	2	3	4	5	(1:18)
*14. How much do you find out from your Company Commander about how well you are doing?	1	2	3	4	5	(1:19)
15. All in all, how satisfied are you with your Company Commander?	1	2	3	4	5	(1:20)

*E group significantly superior to C group.

	Very little		Some		Very much	
16. How much does your Company Commander criticize what a recruit does rather than the kind of person the recruit is?	1	2	3	4	5	(1:21)
17. How much does your Company Commander praise someone for doing a good job?	1	2	3	4	5	(1:22)
*18. When you are being told by your Company Commander something about your performance as a recruit, how much do you think he is trying to help you?	1	2	3	4	5	(1:23)
*19. How much does your Company Commander emphasize correcting rather than punishing mistakes?	1	2	3	4	5	(1:24)
20. How much of the information you receive about how you are doing comes from your Company Commander?	1	2	3	4	5	(1:25)
21. How much does your Company Commander expect you to do things that are impossible?	1	2	3	4	5	(1:26)

Circle the number of the choice which is most appropriate.

*22. How would your Company Commander tell you that something you have done is wrong or poor?

1. Make you do push-ups
2. Say what you did is stupid, childish or bad
3. Tell you in general terms that you are wrong; for example, "That's wrong, recruit."
4. Tell you specifically what is wrong and/or why it is wrong
5. Tell you specifically what is wrong and give you suggestions on how to improve
6. None of the above (1:27)

23. How do you feel when the Company Commander tells you about something you have done wrong?

1. Afraid
2. Stupid
3. No reaction
4. Challenged
5. Encouraged
6. None of the above

*24. How soon after a recruit has done something wrong does your Company Commander usually tell him about it?

1. Immediately -- for example, a recruit is immediately corrected for a mistake during drill
2. Later in the day
3. Next day, later in the week
4. Never (1:29)

25. Are you a recruit petty officer?

1. Yes
2. No (1:30)

In the following situations, circle the choice that best describes what your Company Commander would do or say. Assume it is the second week of training.

26. Everything in Bradshaw's locker is O.K., except for his gym shoes. (What would your Company Commander say?)

1. Nothing
2. "What's wrong with that locker?"
3. "Put your left shoe on top."
4. "You can't even stow your gym shoes right, stupid." (1:31)

27. Kowalski's locker is shipshape. (What would your Company Commander say?)

1. Nothing
2. "That locker should get a 4.0 at M.E.D. inspection."
3. "You're not as big a jerk as I thought."
4. "Keep up the good work, recruit." (1:32)

28. Johnson has his notebook in the wrong back pocket. (What would your Company Commander say?)

1. Nothing
2. "Your notebook should be in the other pocket."
3. "Get your notebook stowed correctly, recruit."
4. "Your notebook just cost you 25 jumping jacks. Let's go." (1:33)

29. Thomas is marching out of step. (What would your Company Commander say?)

1. Nothing
2. "March in step, Thomas."
3. "Get your ass in gear, recruit."
4. "Well, recruits, it seems Thomas doesn't know his right from his left." (1:34)

From the following list of things a good leader should know how to do, please check three areas where you would most like Company Commanders to improve.

_____	telling you what needs to be done and why	(1:35)
_____	handling disagreements and conflicts	(1:36)
_____	teaching and giving instructions	(1:37)
_____	giving rewards and punishments fairly	(1:38)
_____	using the chain of command effectively	(1:39)
_____	listening to what recruits have to say	(1:40)
_____	counseling and giving advice	(1:41)
_____	giving helpful criticism and praising good performance	(1:42)
_____	building morale	(1:43)

A
(1:44)

Appendix C

Survey Item Means

Table 5 = Demographic Data for All Subjects

Tables 6 - 9 = Survey Item Means

Table 6 = First Administration - Experimental Subjects - Item Means

Table 7 = First Administration - Control Subjects - Item Means

Table 8 = Second Administration - Experimental Subjects - Item Means

Table 9 = Second Administration - Control Subjects - Item Means

TABLE 5. DEMOGRAPHIC DATA FOR ALL SUBJECTS

	GCT Score	Navy Experience	Supervisory Experience
E1	40	11-15	1-5
E2	--	16-20	>15
E3	43	11-15	6-15
E4	56	11-15	<1
E5	53	11-15	6-15
E6	50	16-20	6-15
C1	58	0-10	1-5
C2	47	16-20	6-15
C3	47	11-15	6-15
C4	33	16-20	>15
C5	--	--	1-5
C6	60	0-10	1-5

TABLE 6. FIRST ADMINISTRATION - EXPERIMENTAL SUBJECTS - ITEM MEANS

Company / Item	E1		E2		E3		E4		E5		E6	
	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N
1	3.26	38	4.45	29	4.11	27	4.23	22	4.46	35	4.08	36
2	4.25	36	4.89	25	4.48	25	4.73	22	4.71	34	4.67	30
3	4.53	40	4.93	29	4.61	27	4.73	22	4.83	36	4.69	36
4	4.83	35	4.96	25	4.64	25	4.91	22	4.85	33	5.00	30
5	4.63	40	4.93	29	4.59	27	4.61	23	4.58	36	4.67	36
6	4.85	34	4.92	25	4.72	25	4.86	21	4.82	33	4.90	30
7	2.87	38	4.26	28	3.52	27	4.00	23	4.03	36	3.94	36
8	4.34	35	4.70	24	4.68	25	4.86	21	4.85	33	4.37	30
9	4.10	41	4.76	29	4.30	27	4.68	22	3.92	36	4.50	36
10	4.77	34	4.83	24	4.68	25	4.82	22	4.76	33	4.83	30
11	2.20	40	3.23	29	2.89	27	3.09	23	3.06	36	3.33	36
12	3.65	34	3.96	25	4.16	25	4.14	21	3.67	33	4.07	30
13	3.44	41	4.50	30	3.79	28	4.39	23	4.09	35	4.39	36
14	3.07	41	3.80	30	3.36	28	3.70	23	3.28	36	3.68	34
15	3.93	41	4.66	30	4.36	28	4.57	23	4.75	36	4.81	36
16	3.36	39	3.23	30	3.30	27	3.26	23	3.06	33	3.86	36
17	3.08	39	2.80	30	3.07	27	3.57	23	3.09	35	3.69	35
18	4.53	38	5.00	29	4.56	27	4.65	23	4.91	34	4.81	36
19	3.15	39	4.13	30	4.34	26	3.96	23	4.23	35	3.42	36
20	2.58	38	3.83	29	3.26	27	3.23	22	3.31	35	3.74	35
21	2.61	39	2.40	30	2.74	27	3.04	22	2.88	34	2.65	34
22	3.06	34	4.18	28	4.39	18	4.16	19	4.21	29	3.63	27
23	2.24	41	3.61	23	3.17	18	3.05	19	3.40	30	3.15	26
24	2.95	40	2.87	31	2.68	25	2.95	20	2.66	35	2.91	33
26	2.95	38	3.27	30	3.40	25	2.86	21	3.26	34	2.52	31
27	2.98	40	3.00	29	2.09	23	2.73	22	3.15	34	3.09	32
28	2.70	40	3.03	30	3.20	25	2.64	22	3.26	34	2.67	33
29	3.08	38	2.90	30	3.16	25	2.20	20	3.42	33	2.97	33
$\bar{x}$	3.28		3.99		3.72		3.88		3.81		3.88	
SD	2.304		.0529		.0016		.0144		.0025		.0144	

TABLE 7. FIRST ADMINISTRATION - CONTROL SUBJECTS - ITEM MEANS

Company / Item	C1		C2		C3		C4		C5		C6	
	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N
1	3.74	38	3.72	29	3.85	34	3.73	30	3.31	35	4.08	35
2	4.59	32	4.72	25	4.78	32	4.46	26	4.76	33	4.56	34
3	4.81	38	4.73	30	4.59	34	4.83	29	4.91	35	4.17	36
4	4.90	31	4.85	27	4.78	32	4.59	27	4.97	31	4.74	34
5	4.57	37	4.78	28	4.56	34	4.63	30	4.83	35	3.58	36
6	4.79	34	4.83	29	4.88	32	4.73	26	4.90	31	4.62	34
7	3.43	37	3.90	29	3.53	34	3.20	30	2.97	33	4.14	35
8	4.24	33	4.58	26	4.75	32	4.46	26	4.72	32	4.49	35
9	4.21	38	4.28	28	3.58	33	4.13	31	4.34	35	4.23	35
10	4.77	31	4.85	27	4.72	32	4.71	24	4.93	30	4.63	35
11	2.82	38	2.53	30	2.44	34	2.61	31	2.63	35	3.06	36
12	3.68	31	3.81	27	3.77	30	3.50	24	4.16	31	3.85	34
13	4.31	39	3.63	30	4.09	33	3.97	31	3.77	35	3.89	35
14	3.08	39	3.21	29	2.31	32	2.72	29	3.26	35	2.94	35
15	4.38	39	4.58	31	4.30	33	4.29	31	4.57	35	4.33	37
16	3.59	39	3.50	28	3.64	33	3.72	29	3.56	34	3.06	36
17	3.67	39	3.50	28	2.72	32	2.93	29	2.88	33	2.25	36
18	4.74	38	4.64	28	4.51	33	4.59	29	4.53	34	4.42	36
19	3.51	39	3.21	29	2.94	32	2.93	28	3.73	33	3.83	36
20	3.95	37	3.34	29	2.29	31	3.00	29	3.53	34	2.86	36
21	2.11	36	3.24	28	2.57	30	1.81	27	2.15	34	3.06	34
22	3.41	32	2.57	23	3.17	29	1.73	22	2.75	28	3.46	35
23	3.03	32	3.00	20	3.14	21	3.14	21	3.00	23	3.62	29
24	2.79	34	2.97	26	2.80	30	2.76	25	2.94	33	2.83	36
26	3.14	36	2.71	24	3.06	31	2.38	26	2.88	33	3.51	37
27	3.26	34	2.92	26	2.80	30	2.48	25	2.59	32	2.57	35
28	2.60	35	2.43	23	2.66	29	2.13	24	2.43	30	3.43	37
29	2.36	33	2.58	26	2.86	28	2.30	23	2.84	32	3.46	37
$\bar{x}$	3.67		3.63		3.39		3.62		3.53		3.54	
SD	.0121		.0049		.0290		.0036		.0009		.0002	

TABLE 8. SECOND ADMINISTRATION - EXPERIMENTAL SUBJECTS - ITEM MEANS

Company / Item	E1		E2		E3		E4		E5		E6	
	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N
1	3.12	41	4.70	20	3.74	31	3.87	31	4.07	43	4.67	30
2	4.40	38	4.93	14	4.45	29	4.59	29	4.60	37	4.92	25
3	4.41	42	4.63	19	4.52	31	4.77	31	4.36	42	4.87	31
4	4.80	39	4.81	15	4.87	30	4.86	28	4.71	35	5.00	27
5	4.33	42	4.68	19	4.32	31	4.61	31	4.05	43	4.90	30
6	4.80	39	4.88	16	4.80	30	4.79	28	4.69	36	4.85	26
7	2.64	42	4.11	18	3.45	31	3.93	31	3.76	42	4.23	31
8	4.36	39	4.19	16	4.39	28	4.80	30	4.27	37	4.56	27
9	3.40	43	4.70	20	4.31	32	4.20	30	3.71	42	4.61	31
10	4.55	38	4.79	14	4.71	28	4.79	28	4.62	37	4.85	27
11	2.45	42	3.00	20	2.90	31	2.65	31	2.64	42	3.03	31
12	3.90	39	3.36	14	3.70	27	3.67	30	3.54	35	3.67	27
13	3.54	41	4.35	20	3.55	33	4.33	30	3.72	43	4.39	31
14	2.03	41	4.05	19	3.50	34	3.48	31	2.80	44	4.57	30
15	3.68	41	4.63	19	4.38	34	4.61	31	4.55	44	4.90	30
16	3.43	40	3.00	19	3.52	29	3.55	31	3.14	43	3.43	30
17	2.98	40	3.50	18	3.23	31	2.77	31	2.84	43	4.03	30
18	4.03	40	4.79	19	4.40	30	4.26	31	4.57	42	4.77	30
19	2.53	40	4.16	19	3.90	30	3.65	31	3.86	43	4.33	30
20	2.29	41	3.47	17	3.29	31	3.33	30	2.74	42	4.07	29
21	2.62	39	3.32	19	3.00	31	3.23	31	3.19	43	3.03	30
22	2.56	25	4.38	16	3.48	25	4.00	25	3.67	36	4.19	27
23	2.76	29	3.71	17	3.46	24	3.29	24	2.75	24	3.59	22
24	2.85	41	2.42	19	2.70	30	2.78	27	2.77	39	2.65	29
26	2.59	42	3.26	19	2.93	30	2.90	29	3.26	38	3.27	30
27	2.59	41	2.76	17	2.24	29	2.40	30	2.74	39	3.19	31
28	2.45	42	3.05	19	2.76	29	2.89	28	3.18	39	3.00	30
29	3.15	40	3.28	18	3.03	29	2.48	29	3.18	39	3.34	29
$\bar{x}$	3.14		3.98		3.65		3.74		3.50		4.13	
SD	.2809		.0961		.0004		.0049		.0289		.2116	

TABLE 9. SECOND ADMINISTRATION - CONTROL SUBJECTS - ITEM MEANS

Company / Item	C1		C2		C3		C4		C5		C6	
	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N
1	3.13	45	3.37	30	4.64	22	3.48	25	2.94	32	4.41	27
2	4.32	38	4.42	24	4.95	20	4.71	24	4.44	27	4.44	25
3	4.87	45	3.73	30	4.68	22	4.84	25	4.72	32	4.43	28
4	4.89	37	4.44	23	4.80	20	4.96	23	4.96	26	4.83	23
5	4.76	45	4.03	30	4.55	22	4.84	25	4.66	32	4.29	28
6	4.92	37	4.46	24	4.75	20	4.96	23	4.85	26	4.74	23
7	2.80	45	3.45	29	4.55	22	2.64	25	2.33	30	4.26	27
8	4.22	37	4.17	23	4.75	20	4.54	24	4.30	27	4.78	23
9	3.76	45	3.77	30	4.00	22	4.08	25	3.97	32	4.39	28
10	4.65	37	4.48	23	4.75	20	4.78	23	4.74	27	4.78	23
11	2.14	43	2.67	30	3.04	22	2.12	25	1.97	32	3.00	28
12	3.34	38	3.65	23	3.70	20	3.56	23	3.52	27	4.09	22
13	3.61	44	3.53	30	4.00	22	3.76	25	4.13	32	4.17	30
14	3.29	45	3.17	30	3.18	22	3.40	25	2.69	32	3.55	29
15	3.93	44	4.18	28	4.86	22	4.44	25	4.34	32	4.60	30
16	3.71	41	3.15	26	2.95	21	3.83	23	3.88	32	2.57	30
17	3.10	42	2.85	26	3.48	21	3.22	23	3.13	32	3.33	30
18	4.45	42	3.81	26	4.71	21	4.22	23	4.32	31	4.69	29
19	2.55	42	3.15	26	3.86	21	2.87	23	2.42	31	3.93	29
20	2.66	41	2.60	25	2.81	21	3.26	23	2.22	32	3.14	29
21	2.50	42	3.11	26	3.67	21	2.09	23	2.53	30	3.20	30
22	2.94	35	2.74	23	3.40	20	1.81	21	1.67	27	3.23	26
23	3.39	31	2.80	20	3.31	16	2.53	19	2.17	24	3.13	23
24	2.88	43	2.74	27	2.64	22	2.79	24	2.87	31	2.59	29
26	2.42	43	2.74	27	3.00	21	2.22	23	2.52	29	3.13	30
27	2.44	41	2.44	27	2.90	20	2.05	22	2.33	30	2.50	30
28	2.41	41	2.59	27	2.86	21	2.41	22	2.48	29	3.17	30
29	2.23	39	3.04	26	3.33	21	2.50	22	2.90	31	3.28	29
$\bar{x}$	3.36		3.27		3.80		3.59		3.16		3.72	
SD	.0144		.0441		.1024		.0121		1.024		.0576	

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13. ABSTRACT

A pilot study was conducted to investigate the application of the PLATO IV system to training interpersonal skills. As part of the development of an experimental design to be undertaken in the future, several activities were involved. Suitable interpersonal skills were considered and a single one, giving effective performance feedback, was chosen for the pilot study. Training materials for this skill were developed and coded into the PLATO IV system. A small sample of experimental and control subjects were tested and trained, and data about their feedback skill performance and companies' performance collected and analyzed. It appears that the training had some effect on skill performance. The proposed experimental design was evaluated as suitable for application to a larger study.

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